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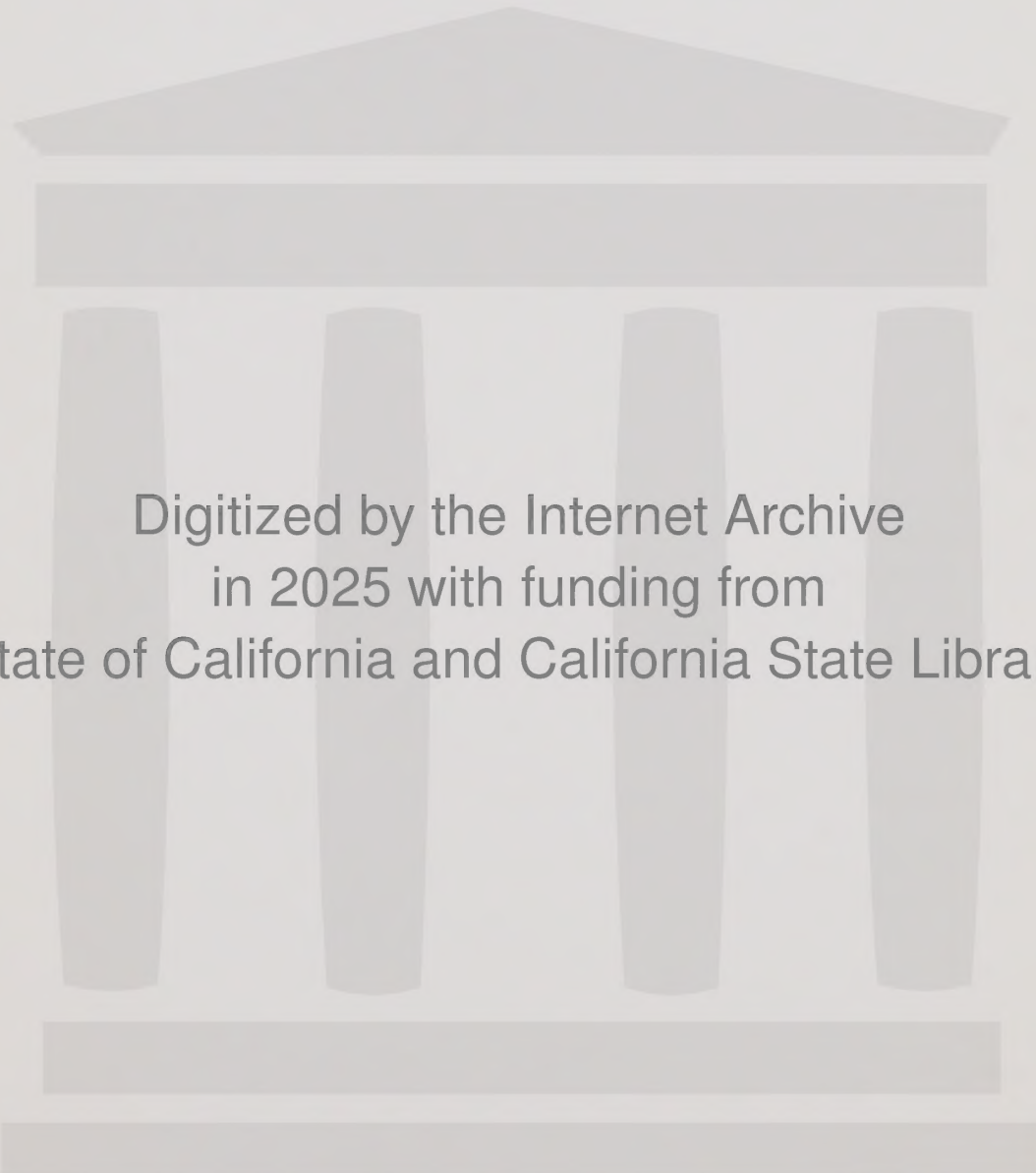
OAKLAND - ALAMEDA COUNTY COLISEUM EXPANSION Environmental Impact Report

December 28, 1989

ER No. 89 - 41

State Clearinghouse No. 89091218

Written comments may be sent to the
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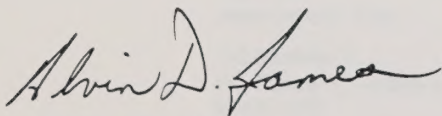
DRAFT ENVIRONMENTAL IMPACT REPORT FOR:
OAKLAND-ALAMEDA COUNTY COLISEUM EXPANSION
(Project Name)
California Environmental Quality Act (CEQA)

RELEASE OF REPORT FOR PUBLIC REVIEW

The City of Oakland is hereby releasing this draft Environmental Impact Report (EIR), finding it to be accurate and complete and ready for public review. Members of the public are invited to respond to the EIR. Comments should focus on the sufficiency of the EIR in discussing possible impacts on the environment, ways in which adverse effects might be minimized, and alternatives to the project in light of the EIR's purpose to provide useful and accurate information about such factors. Please address all comments to the Oakland City Planning Commission, City Hall, One City Hall Plaza, Oakland, California, 94612. Comments should be received no later than February 13, 1990.

- ☒ The City Planning Commission will conduct a public hearing on the draft EIR on January 24, 1990 at a meeting beginning at 1:30 p.m. at Lakeside Garden Center, 666 Bellevue Ave., Oakland, CA
- ☐ After all comments are received, a final EIR will be prepared and considered for acceptance by the City Planning Commission at a meeting to be determined.
- ☒ The draft EIR is attached.
- ☐ The draft EIR is available at the City Planning Department.

If you have any questions, please telephone the City Planning Department at 451-6321 451-6210 . Ask for Anu Raud.



ALVIN D. JAMES
Director of City Planning

DATE: December 28, 1989

DRAFT

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**Environmental
Science
Associates, Inc.**

760 Harrison St.
San Francisco, California
94107-1235
(415) 896-5900

4221 Wilshire Blvd.
Suite 480
Los Angeles, California
90010-3512
(213) 933-6111



OAKLAND-ALAMEDA COUNTY COLISEUM EXPANSION
DRAFT ENVIRONMENTAL IMPACT REPORT

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I. INTRODUCTION

This Draft Environmental Impact Report (Draft EIR) has been prepared in conformance with the California Environmental Quality Act (CEQA) and its applicable implementing guidelines.

The City of Oakland prepared an Initial Study on August 24, 1989 on the proposed Oakland-Alameda County Coliseum Complex Expansion project (see Appendix A). The Initial Study found that the proposed project would not result in potential significant effects with respect to the following issues:

- | | |
|--|---|
| <u>Geophysical</u> | - Unstable earth conditions or changes in geologic substructures; construction on unstable land which might be subject to slides during an earthquake; construction within one-quarter mile of an earthquake fault; substantial depletion of a nonrenewable natural resource or inhibition of its extraction. |
| <u>Water</u> | - Substantial degradation of water quality; interception of an aquifer by cuts or excavation. |
| <u>Land Use and
Socio-Economic
Factors</u> | - Conflict with approved plans for the area or the Oakland Comprehensive Plan; destroy or alter a structure, object, natural feature, or site of historical, architectural, or archaeological significance. |

As permitted by CEQA, these environmental effects will not be addressed further in the Draft EIR on the proposed project.

The Initial Study identified the following potentially significant environmental effects that could or will result from implementation of the proposed project:

- | | |
|----------------------|---|
| <u>Geophysical</u> | - Major changes in topography or ground surface relief features. |
| <u>Air and Water</u> | - Substantial air emissions, deterioration of ambient air quality; changed drainage patterns or increased rates or quantities of surface water runoff. |
| <u>Biotic</u> | - Reduce the quantity of fish and wildlife, interfere with migratory or other natural movement patterns, degrade existing habitats or require extensive vegetation removal; reduce the number of rare or endangered species of plants or animals. |

Land Use and
Socio-Economic
Factors

- Generate substantially increased vehicular movement or burden existing streets or parking facilities; elicit substantial public controversy or opposition; substantially impact existing transportation systems or circulation patterns; substantially increase ambient noise levels in adjoining areas; burden public services or facilities including fire, solid waste, police; burden existing utilities include electricity, gas, water and sewers; risk of exposure to hazardous materials; use or encourage use of substantial quantities of fuel or energy.

This Draft EIR evaluates these potentially significant environmental effects of the proposed project, and also evaluates various other related potential effects that could result from implementation of the project.

II. SUMMARY

PROPOSED PROJECT

The Oakland Alameda County-Coliseum Complex, Inc. proposes to expand the existing Oakland Coliseum Stadium to attract a National Football League team to the City of Oakland. The Oakland-Alameda County Coliseum Complex is located in the City of Oakland, east of I-880, south of 66th Avenue, west and south of Damon Slough and the BART right-of-way, and north of Hegenberger Road. The proposed site for the practice field expansion is at the corner of Doolittle Drive and Harbor Bay Parkway, next to the north field of the Metropolitan Oakland International Airport (MOIA). The existing Oakland Coliseum Complex sponsors approximately 296 event-days per year. This figure includes about 78 to 85 baseball games at the Stadium and about 42 basketball games at the Arena. Over the course of a year, there are about nine to 11 days when a basketball game is scheduled on the same day as a baseball game. Other major events at the Coliseum include exhibits, Arena and Stadium concerts, circuses, and ice shows. A National League Football team would add eight to 11 home football games to the Coliseum schedule.

The project would include four major parts:

- 1) Increasing seating capacity and internal services of the Stadium from 53,000 seats in football configuration to approximately 64,000 seats; and from 50,000 to 57,000 seats in the baseball configuration;
- 2) Expanding office and restaurant / function space at a location between the Arena and the Stadium;
- 3) Constructing a Hall of Fame; and
- 4) Reconstructing the practice fields and field house at the Doolittle Drive site.

Stadium Expansion

To provide about 65,000 seats for the football configuration, the project would modify each of the five seating levels: the total football capacity under the proposed project, would increase from 52,993 to 64,184 seats. In the baseball configuration, the field

dimensions would be maintained by rotating the moveable sideline seating to the first and third base lines and by retracting the seating behind home plate and the outfield. Total baseball seating capacity would increase from 49,993 to 56,728 seats.

Hall of Fame

As part of the proposed project, a 80,000-square-foot, three-level Hall of Fame for Oakland sports figures would be constructed Northwest of the Stadium, either adjacent to Damon Slough, or on a structure bridging the slough. No detailed plans for the Hall of Fame have been developed.

Office Space

Approximately 33,000 square feet of office / restaurant / function space would be constructed on the Plaza Level, between the Stadium and the Arena. The space would house the administrative offices for the Oakland Athletics and the Golden State Warriors on a lower level. The upper level would have restaurant / function room space. The design for the office space is still at a conceptual stage; however it would include two levels on a 16,000-square-foot footprint.

Practice Fields

The Coliseum developed two football practice fields, a field house, and parking at Doolittle Drive and Harbor Bay Parkway on a 5.2-acre site about five miles (via roads) from the Stadium. (The site is leased from the Port of Oakland). The two existing grass practice fields are not full-size. The project would demolish the existing facilities and rebuild three, full-size practice fields and a larger, 50,000 sq. ft. field house. Two of the practice fields would be grass, and the third would be artificial turf. The new practice fields and field house would occupy about 8.2 acres.

SCHEDULE

Construction of the Stadium expansion would begin in late 1990, after the end of the baseball season. The expanded seating would be completed by the fall of 1991. The Hall of Fame and office space would be completed by 1992, and the practice field expanded by 1991.

UNAVOIDABLE SIGNIFICANT ADVERSE EFFECTS

The project would increase event-related vehicle trips and would cumulatively degrade Levels of Service (LOS) at several intersections in the Coliseum vicinity. Traffic effects of the proposed project would result from increased patronage added to existing peak-hour traffic, plus event traffic based on existing capacity of the Stadium, and cumulative traffic from other development in the Coliseum area. For these circumstances, project traffic by itself would worsen the LOS with unsatisfactory conditions at several intersections for Football Event - Sunday Noon Period; Football Event Sunday P.M. Period; and Baseball Night Game - Weekday P.M. Period. The project would add up to 4,200 BART (round-trip) passengers, the equivalent of four 10-car trainloads, leading to significant crowding on available trains in the Coliseum BART station, or in substantial delays to BART passengers waiting for trains.

Project traffic would contribute to future exceedances of federal and state carbon monoxide (CO) eight-hour standards at area intersections, under worst-case meteorological conditions: San Leandro Street / 73rd Avenue; San Leandro / 76th; San Leandro / 66th Avenue; and Hegenberger Road / Coliseum Way. In all cases where these exceedances are estimated with the project for peak Monday night football and weekday baseball traffic conditions, the CO concentrations for 1995 conditions would be less than values with existing football or baseball capacity. That reflects reduced future automobile emissions resulting from continuing federal and state programs that would offset the emissions from increased cumulative and project traffic. Project air quality effects would be reduced by transportation mitigation measures to reduce vehicle traffic to Stadium events, as noted above.

Other environmental effects identified in this EIR would not be considered significant, substantial adverse impacts and/or would be mitigated to a level of insignificance (see Table 1).

CUMULATIVE EFFECTS

Development of the project would incrementally increase the amount of building space devoted to professional sports activities. Vehicle trips generated by project operation would incrementally add to increases in daily and peak-hour trips on local streets and intersections, and would add incrementally to the increases in demand for off-street

parking spaces and the anticipated shortfall in off-street parking supply for operation of the Coliseum. Project operation would thereby incrementally add to increased demand for off-street parking spaces. As discussed above, several of the cumulative project event scenarios would result in significant effects on intersection operations and BART loading.

The major effects of cumulative development on transportation, air quality and noise are evaluated in the respective sections of this EIR. Transportation effects of existing traffic, plus use of existing Stadium capacity, cumulative development in the Coliseum vicinity, and project-related traffic would result in the intersection Levels of Service described in Section IV.B.

Transportation effects of development of a new 20,000-seat Arena at the Coliseum Complex (5,000 additional seats) would not substantially change the Levels of Service expected for peak event conditions (basketball plus baseball).

GROWTH-INDUCING IMPACTS

Development of the project could have growth-inducing effects by increasing Stadium capacity. On the assumption that the Stadium improvements attract a National Football League franchise to Oakland, and that increased baseball seating capacity resulted in higher ticket sales for the Oakland Athletics, the expanded Stadium would generate additional revenues directly to the Oakland-Alameda County Coliseum Complex, and indirectly to the City of Oakland as a result of additional visitors coming to Oakland to attend Stadium events. The project would result in direct and indirect employment, and would increase the demand for goods and services to serve the increased patronage. It is not expected, however, that the Stadium expansion would directly induce other new development, or physical change. That is, the increased demand for the goods and services would primarily be provided by existing businesses, who may experience higher levels of sales.

ALTERNATIVES

ALTERNATIVE A: NO PROJECT

Under the Alternative A, the Oakland-Alameda County Coliseum Complex would not be expanded. Office space would not be added to the Plaza Level, the Hall of Fame

would not be constructed over / or adjacent to Damon Slough, and the practice fields would not be expanded and reconstructed. Thus, the land use, transportation, air quality, noise, public services, wetlands and geotechnical effects described in this EIR would not occur, including potential significant effects on transportation and air quality. The Coliseum administration has rejected this alternative because it would not attract a new National Football League franchise to Oakland.

ALTERNATIVE B: ALTERNATIVE SITE

Alternative B would result in the expansion of the Stadium seating capacity and office space. This alternative would move the Hall of Fame and practice fields to a different location, that would avoid potential adverse effects on Damon Slough from construction of the Hall of Fame, and or from expansion of the practice fields in part of the wetlands near Doolittle Drive. Other impacts of the project resulting from expansion of Stadium capacity would be the same as those of the proposed project.

ALTERNATIVE C: REDUCED MAGNITUDE

Alternative C would expand the Stadium by 6,000 football seats, rather than the 12,000 as proposed under the project. The offices, Hall of Fame and practice field expansion would be constructed on the Coliseum site and on the existing practice field site. Although peak event traffic generation would be reduced, transportation effects of this alternative would result in similar Levels of Service at area intersections as those resulting from the proposed project for the Monday night football peak condition. Other effects of this alternative would be the same as those of the proposed project.

ALTERNATIVE D: ALTERNATIVE CONFIGURATION

Alternative D would relocate the Hall of Fame and the proposed office space within the Coliseum site, and the practice fields would be reconfigured at the Doolittle Drive site. The Hall of Fame would be developed as part of the office / restaurant function room space at the Plaza between the Arena and Coliseum. This alternative would avoid potential effects of developing the Hall of Fame near or over Damon Slough, and expanding the practice fields in part of a wetlands area near Doolittle Drive. Other effects of this alternative resulting from expansion of the Stadium would be the same as those of the proposed project.

TABLE 1: SUMMARY OF MAJOR IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	MITIGATION STRATEGY	LEVEL OF SIGNIFICANCE AFTER MITIGATION
1. Plans, Policies and Approval Process The proposed project falls under the jurisdiction of a number of Federal, State, and Local agencies.	Permits and approvals from the appropriate agencies would be required prior to the development of the project.	Implementation of the measures proposed with the project would lower the level of impact to less than significant levels.
2. Transportation The proposed project would generate additional traffic on local streets and freeways around the Coliseum Complex, causing congestion and traffic delays. The addition of Sunday football traffic, and weeknight baseball traffic would result in an increase in traffic congestion in the area. Cumulative traffic conditions without the project would also result in traffic congestion. Other impacts of the project would be increased demand for parking, BART and transit.	Institute additional express bus service from outlying parking areas; expand BART service to the Coliseum.	Impacts of the project cannot be mitigated below a level of significance.
3. Air Quality Increased project and cumulative traffic would result in vehicle CO emissions and local ambient CO levels that could exceed state and federal 8-hour standards. Cumulative traffic without project would also result in those exceedances.	The project sponsor should continue and intensify promotion of transit to reduce vehicle trips.	Impacts of the project cannot be mitigated below a level of significance.
4. Noise The addition of 12,000 people to the potential stadium crowd would increase emission by one decibel, which is not significant.	None needed.	This impact is not significant.

(Continued)

TABLE 1: SUMMARY OF MAJOR IMPACTS AND MITIGATION MEASURES (Continued)

ENVIRONMENTAL IMPACT	MITIGATION STRATEGY	LEVEL OF SIGNIFICANCE AFTER MITIGATION
The use of aircraft for advertising purposes creates elevated noise levels at adjacent residences, which last throughout certain events at the Coliseum. The addition of football games to the Coliseum schedule would increase the number of days during which elevated noise levels would occur.	Abolish advertising aircraft or restrict flight paths to protect residents.	This impact is not significant.
5. Wetlands Issues		
The Hall of Fame, if built over Damon Slough would shade the tidal area, resulting in a loss of vegetation and habitat value. The building; itself would be considered fill by the San Francisco Bay Conservation and Development Commission (BCDC), and any support structures in the stream bed of jurisdiction wetland constitute fill subject to regulations of the Corps of Engineers. Fill would also result in a loss of wetland acreage and habitat value.	Mitigation for habitat loss from the Hall of Fame, could be the creation of a similar habitat in a nearby location, or restoration or enhancement of a nearby degraded tidal channel. A structure over navigable waters requires a Section 10 (Rivers and Harbors Act) permit from the COE. The permit would address the protection of the waterway during the construction phases.	Implementation of the measures proposed with the project would lower the level of impact to less than significant levels.
Expanding the practice fields to the east would include the placement of fill in a wetland that is potentially subject to Corps of Engineers jurisdiction. The fill would result in a loss of wetland acreage and block a culvert that drains into Fan Marsh.	The mitigation requirements for the Hall of Fame impacts apply to the practice fields. Additionally, a culvert to Fan Marsh would be lengthened to allow continued drainage into Fan Marsh.	

(Continued)

TABLE 1: SUMMARY OF MAJOR IMPACTS AND MITIGATION MEASURES (Continued)

ENVIRONMENTAL IMPACT	MITIGATION STRATEGY	LEVEL OF SIGNIFICANCE AFTER MITIGATION
6. Public Services		
Fire service demand may result in an increase as a result of the project. Fire response times may increase slightly as a result of increased traffic in the area.	The project sponsor should incorporate fire safety measures in the specific project design.	Implementation of the measures proposed with the project would lower the level of impact to less than significant levels.
Police service demand may increase slightly as a result of the project.	The expansion plans could be reviewed and approved by the Oakland Police Department to ensure access for emergency response services.	Implementation of the measures proposed with the project would lower the level of impact to less than significant levels.
Water sewage treatment and solid waste effects would be minor.	None required.	
7. Geotechnical Issues		
The Coliseum and practice field sites would be subject to strong groundshaking during a major earthquake on the San Andreas, Hayward or Calaveras faults. Soils beneath the sites may be prone to liquefaction which could damage building foundations.	Buildings will be designed in conformance with the seismic safety standards of the Uniform Building Code.	Implementation of the measures proposed with the project would lower the level of impact to less than significant levels.

(Continued)

 TABLE 1: SUMMARY OF MAJOR IMPACTS AND MITIGATION MEASURES (Continued)

ENVIRONMENTAL IMPACT	MITIGATION STRATEGY	LEVEL OF SIGNIFICANCE AFTER MITIGATION
8. Energy		
The increased capacity of the Stadium would encourage more number of patrons to drive to the stadium, which would increase the demand for fuel.	See mitigation measures for transportation.	This impact is not significant.
The project would increase the demand for natural gas and electricity.	The project design should incorporate energy saving measures to reduce the demand for new energy. The project should encourage recycling.	This impact is not significant.
9. Aesthetics		
Some visual impacts would be experienced with the construction of the Hall of Fame along 66th Avenue.	Landscaping around the structure would buffer it from the adjacent road	Implementation of the measures proposed with the project would lower the level of impact to less than significant levels.

 SOURCE: Environmental Science Associates, Inc.

III. PROJECT DESCRIPTION

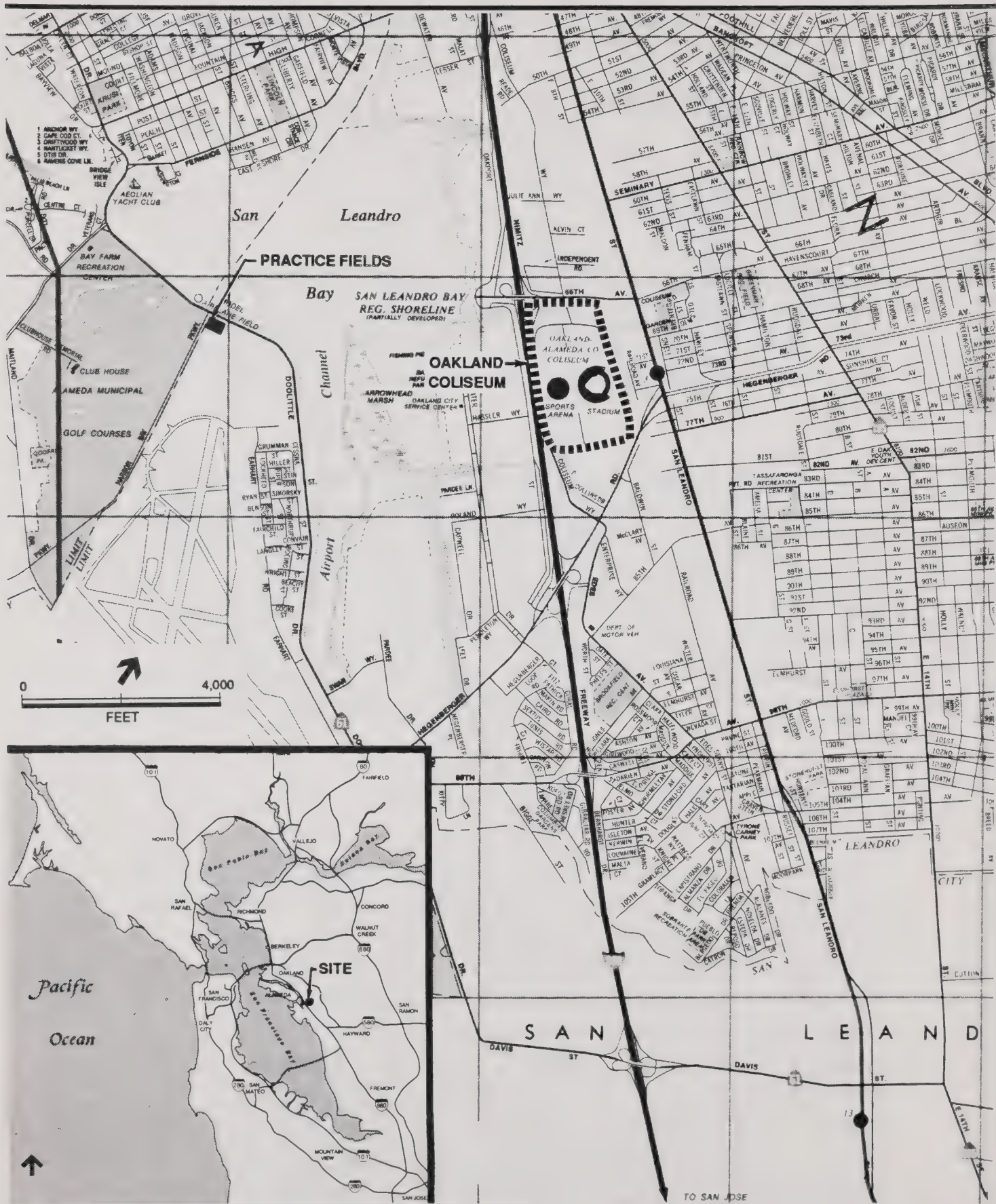
A. PROJECT LOCATION

The Oakland-Alameda County Coliseum Complex is located in the City of Oakland, east of I-880, south of 66th Avenue, west and south of Damon Slough and west of the BART right-of-way, and north of Hegenberger Road (see Figure 1). The proposed site for the practice field expansion is at the corner of Doolittle Drive and Harbor Bay Parkway.

The Coliseum site is roughly rectangular in shape. The Stadium and Arena are located in the center of the site, with a connecting Plaza Level and are surrounded by parking, driveways and landscaping. Damon Slough borders the north and east side of the project site (see Figure 2). The practice fields are located on about five acres adjacent to the Alameda Municipal Golf Course and the north field of Metropolitan Oakland International Airport, on lands leased from the Port of Oakland. The Coliseum Complex expansion would take place within the existing site. The proposed practice fields would require an additional three acres to accommodate a third football practice field.

B. EXISTING COLISEUM ACTIVITIES

The Oakland-Alameda County Coliseum Complex, Inc. is a private corporation which administers the Coliseum Complex on behalf of Oakland and Alameda County. The Coliseum Complex was originally designed by the firm of Skidmore, Owings, and Merrill, and was completed in 1965. The Stadium is an outdoor amphitheatre with tiered seating for maximum viewing of the field below, usually used for sports events. The Stadium now seats up to 53,000 for football, and 50,000 for baseball. The 15,000-seat Arena is an indoor amphitheatre with tiered seating. The Stadium and Arena form an east-west axis, with large parking areas to the north and south. The Stadium was designed as a generally circular set of grandstands around the playing field, developed at about 22 feet below sea level; thus, only the upper part of the Stadium is visible, as an exposed concrete structure, within a landscaped earthen bank, surrounded by lighting standards. Eucalyptus planting marks the East (bleacher) end of



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Source: CSAA and Environmental Science Associates, Inc.

FIGURE 1
PROJECT LOCATION

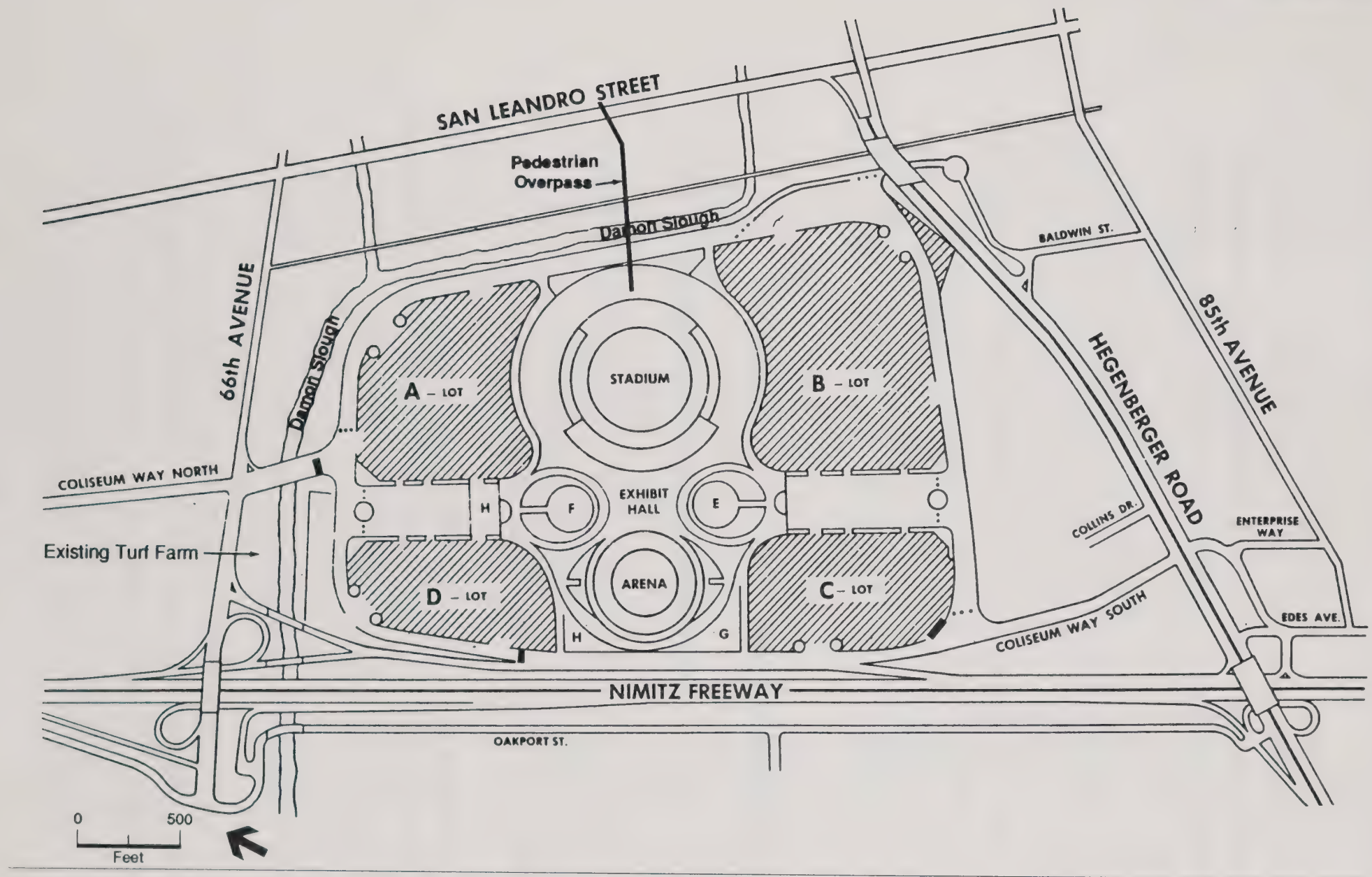


FIGURE 2
SITE PLAN (EXISTING)

the Stadium. The Arena is also a circular structure rising about 60 feet. A glass facade is recessed behind X-shaped trusses from the base to the roof. In the evening, lighting makes the interior visible from nearby areas. While the Stadium is about twice the diameter of the Arena, the Arena's location near I-880, its height, and architectural features make it the most prominent visual feature of the Coliseum Complex. The Stadium is the home of the Oakland Athletics American League baseball team. The Arena is the home of the Golden State Warriors basketball team. The Coliseum Complex hosts other seasonal events including: concerts, exhibits, wrestling, circuses, trade shows, ice capades, and high school basketball and football. There are approximately 78 to 85 baseball games in the stadium, and about 42 basketball games in the Arena, per year. Over the course of a year, there are approximately nine to 11 days when there is Stadium baseball game and an Arena basketball game on the same day. The Coliseum had a total of about 4,125,800 patrons in 1988./1/ From 1966 to 1981, the Stadium was the home of the Oakland Raiders National Football League franchise.

C. PROJECT OBJECTIVES

The proposed project would expand the existing facilities of the Oakland-Alameda County Coliseum Complex, Inc. to attract a National Football League team to the City of Oakland. A football team would have up to 11 games per year at the Stadium, including possible playoffs. The proposed project would increase the football seating capacity of the Stadium, from 53,000 to approximately 64,000 seats. The project would also expand baseball seating from about 50,000 seats to about 57,000 seats.

Other objectives are to provide new office space for the Oakland Athletics and Golden State Warriors, and new restaurant/function rooms in the area between the Stadium and Coliseum; to develop a Hall of Fame to commemorate Oakland Athletes; and to enlarge and improve football practice facilities.

D. PROJECT CHARACTERISTICS /1/

The Oakland-Alameda County Coliseum Complex, Inc. proposes to expand the existing Oakland Coliseum Stadium to attract a National Football League team to the City of Oakland. The project would include four major parts:

- 1) Increasing seating capacity and internal services of the Stadium from 53,000 seats in football configuration to approximately 64,000 seats;

- 2) Expanding office and restaurant / function space at a location between the Arena and the Stadium;
- 3) Constructing a Hall of Fame; and
- 4) Reconstructing the football practice fields and field house at the Doolittle Drive site.

Expansion of the Stadium would allow increased attendance for football games. However, existing events at the Coliseum would not necessarily experience increased patronage. For example, baseball games are not typically sold out with existing seating, except for certain weekend games or championship series.

STADIUM EXPANSION

Football

To increase the seating capacity from 53,000 to 64,000 seats for the football configuration, the project would modify each of the four existing seating levels of the Stadium. Modification plans for the Stadium are described in three parts including I) First Deck, II) Bleachers, and III) Second, Press / Third Deck.

First Deck modifications would include lowering the Stadium playing field by six feet, to permit an additional eight rows of seating at the 50-yard line (see Figure 3). The sideline seating structures would rotate to accommodate a football or baseball configuration. This phase would increase seating in this area from the existing 16,948 seats to 19,164 seats.

In the Bleachers, existing portable outfield seating would be replaced with permanent concrete seats, and 18 rows of retractable bench seats in front of the bleacher section for the football configuration (see Figure 3). This would increase seating in this section of the Stadium from existing 10,000 seats to 13,204 seats under the project. (For the baseball configuration, the front face of this retracted seating would become the location of the new outfield wall. (See Figure 4.)

At Second, Press and Third Decks, the Second Deck would be extended from the existing 80% coverage, to fully enclose the circle around the Stadium around the east end zone, below the existing scoreboards (see Figure 3). This phase would also extend

FIRST DECK EXPANSION

- A) Rotating Sideline Seating Structure
- B) New Seating

BLEACHERS

- C) New Concrete Seating;
18 Rows Retractable for Baseball

SECOND AND THIRD DECK

- D) Extension of Second and Third Deck
by two bays
- E) Completion of Second Deck Circle

CLUB LEVEL

- F) Additional Lounges and Suites
in Second and Third Deck Area

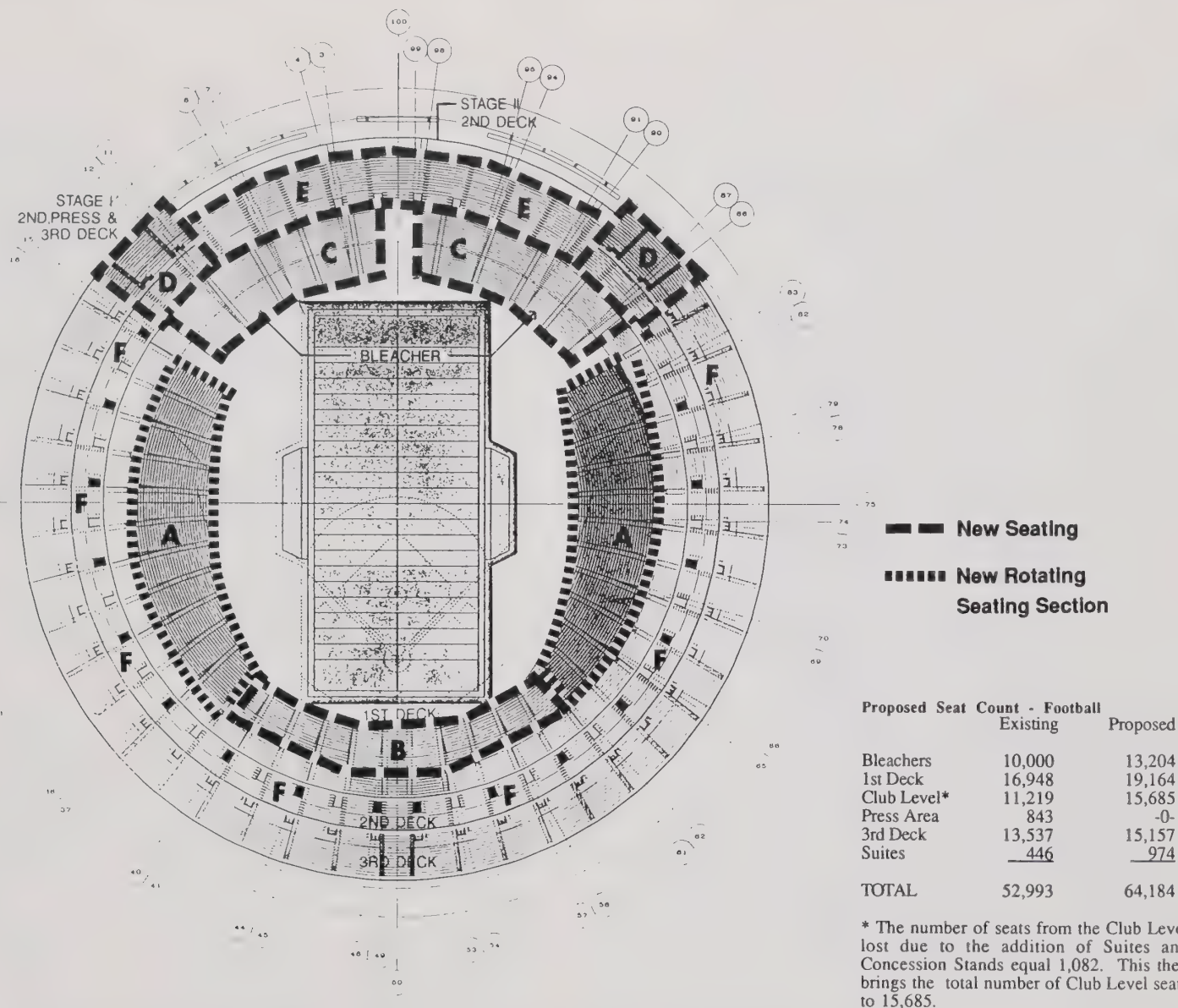


FIGURE 3
PROPOSED SEATING PLAN
FOOTBALL CONFIGURATION

FIRST DECK EXPANSION

- A) Sideline, Rotating Seating Structure
- B) New Seating, partially retracted for Baseball

BLEACHERS

- C) New Concrete Seating;
18 Rows Retractable for Baseball

SECOND AND THIRD DECK

- D) Extension of Second and Third Deck
by two bays
- E) Completion of Second Deck Circle

CLUB LEVEL

- F) Additional Lounges and Suites in
Second and Third Deck Area

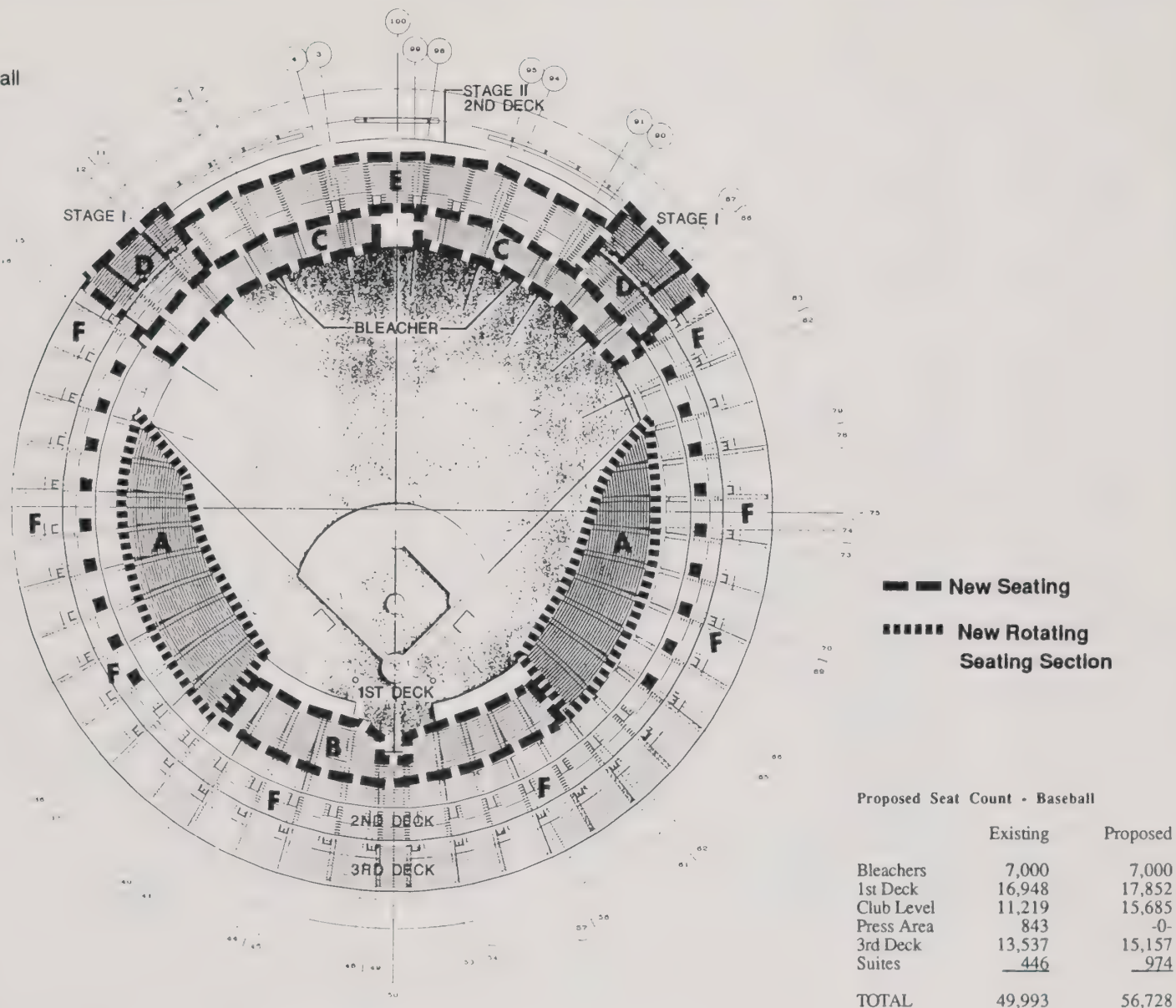


FIGURE 4
PROPOSED SEATING PLAN
BASEBALL CONFIGURATION

two bays of the Third Deck toward the scoreboard (see Figure 3). The Second Deck extension and Third Deck bays would add 4,150 seats. The extension of the Second Deck would allow expansion of suite capacity from 446 to 974 seats.

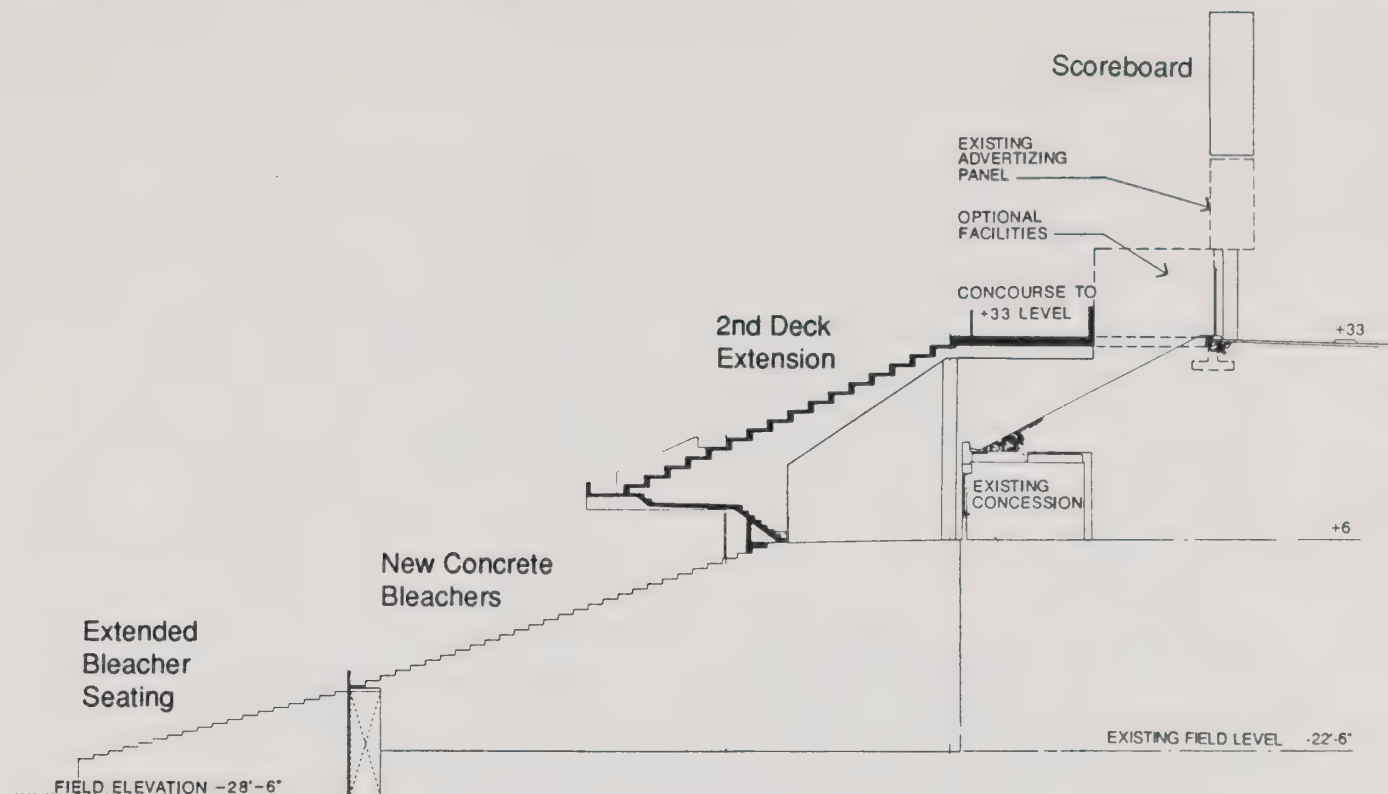
Total football seating capacity of the Coliseum after expansion would be 64,184 seats. Other expansion of the Stadium would include the formation of Club Level facilities and other auxiliary spaces (see Figure 5). Club Level facilities would be located at the Second Deck, and would include eight lounge areas. Club Level facilities would include about eight lounge spaces, which would include concessions, vending areas and lavatories. Auxiliary spaces include the Football Press Box at the top of the Third Deck, and Football Locker Rooms below the proposed permanent seating in the bleacher area. Currently, that level is occupied by the Oakland Athletics offices, commissary storage and Stadium operations storage. Those uses would be relocated throughout the complex. The proposed expansion would accommodate eight lounges, additional concessions, toilet facilities, and vending areas; 44 new suites would also be added below the Third Deck. New football locker rooms would occupy the area below the new permanent seating in the bleacher area.

Baseball

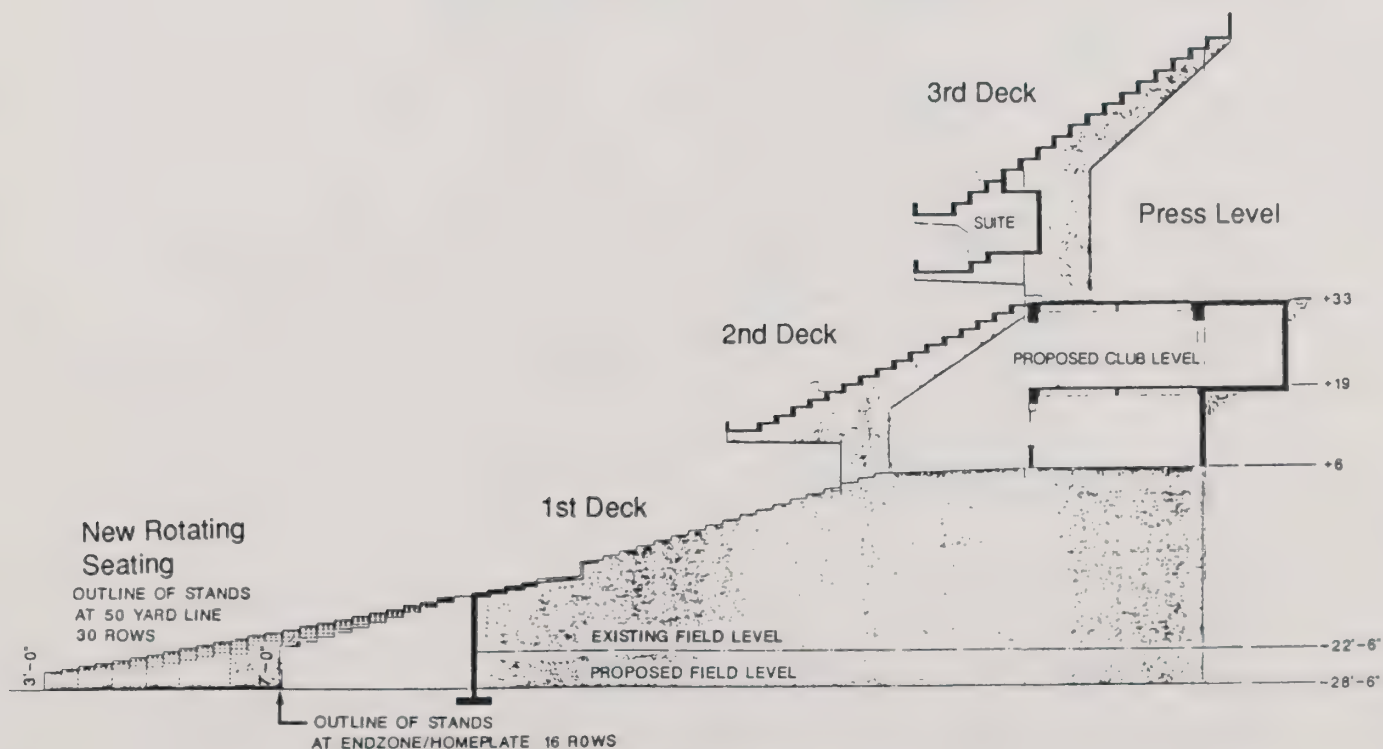
In the baseball configuration, the baseball field dimensions would be maintained by rotating the movable sideline seating to the first and third baselines (see Figure 4) and by retracting the seating behind home plate and the outfield. Total baseball seating capacity would increase from 49,993 to 56,728 seats. The relocation of the baseball diamond by 20 feet toward the outfield would allow 16 rows of permanent seating to be constructed in front of the existing aisle in the aisle parallel to the west end zone / home plate area.

Hall of Fame

As part of the proposed project, a 80,000-square-foot, three-level Hall of Fame for Oakland athletes would be constructed northwest of the Stadium, either adjacent to Damon Slough, or on a structure bridging the slough (see Figure 2). No detailed plans for the Hall of Fame have been developed.



CROSS - SECTION AT EAST END ZONE



CROSS - SECTION AT MID - FIELD

FIGURE 5
CROSS - SECTIONS

Office Space / Restaurant

Approximately 33,000 square feet of office / restaurant / function space would be constructed on the Plaza Level, between the Stadium and the Arena. The space would house the administrative offices for the Oakland Athletics and the Golden State Warriors on a lower level. The upper level would have restaurant / function room space. The design for the office space is still at a conceptual stage; however it would include two levels on a 16,000-square-foot footprint (see Figure 6).

Practice Fields

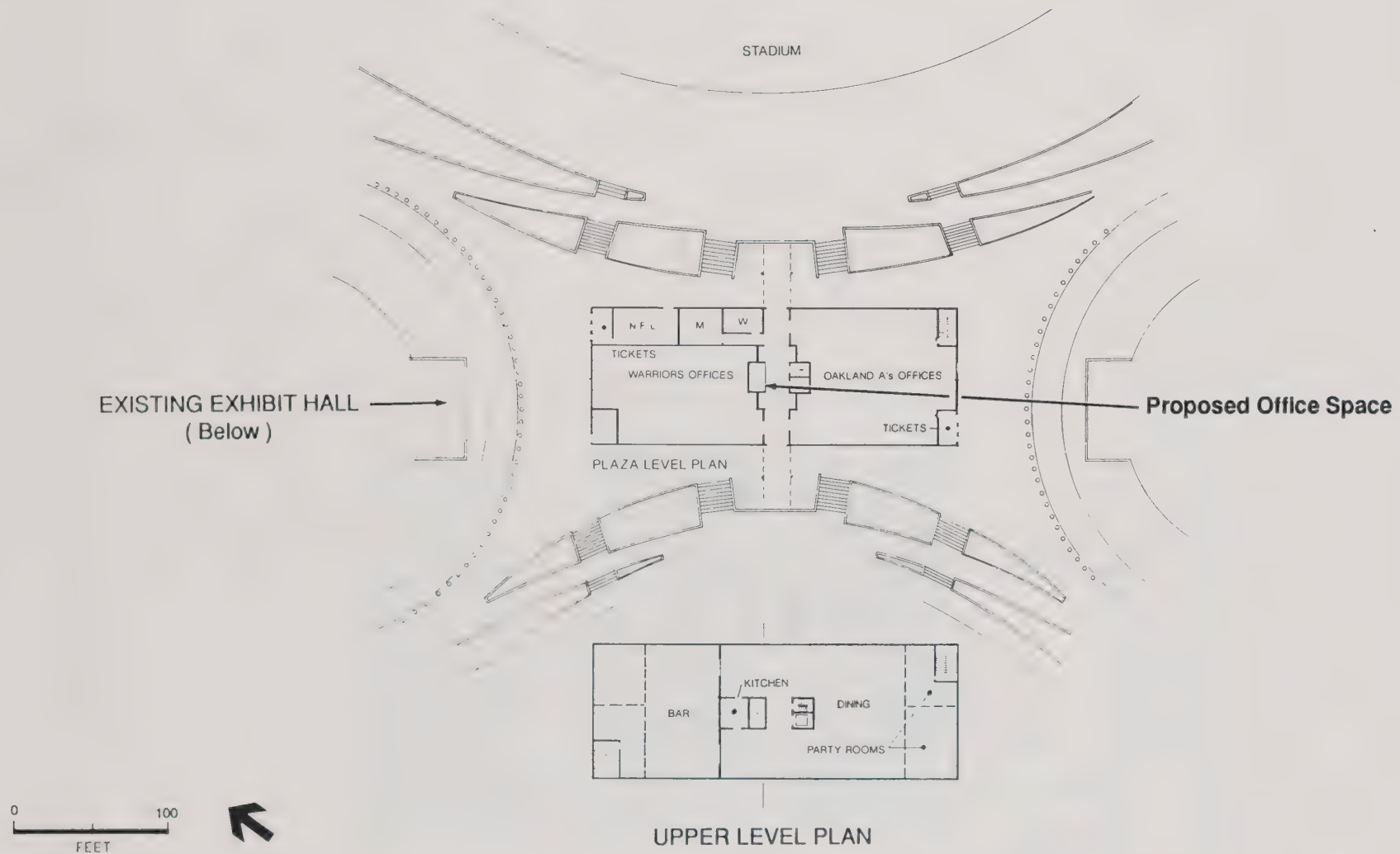
The Coliseum operation includes two football practice fields, a field house, and parking at Doolittle Drive and Harbor Bay Parkway on a 5.2-acre site about five miles (via roads) from the Stadium (see Figure 1). (The site is leased from the Port of Oakland). The two existing grass practice fields are not full-size. The project would demolish the existing facilities and replace the with three, full-size practice fields and a larger, 50,000 sq. ft. field house (see Figure 7). Two of the practice fields would be grass, and the third would be artificial turf. The new practice fields and field house would occupy about 8.2 acres.

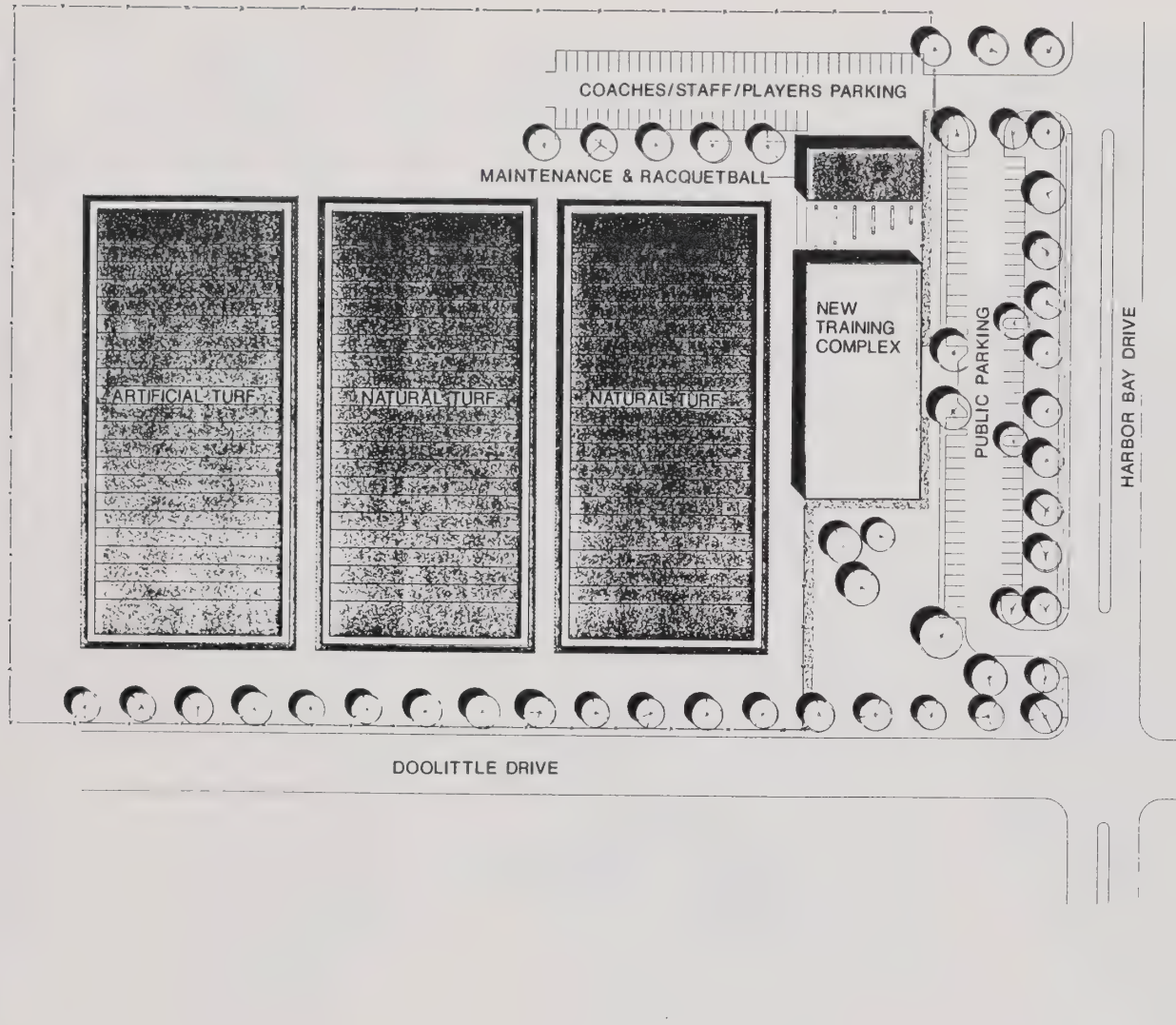
SCHEDULE

Construction of the Stadium expansion would begin in late 1990, after the end of the baseball season. The expanded seating would be completed by the Fall of 1991. The Hall of Fame would be completed by 1992, the office space by 1992, and the practice field expansion by 1991.

E. CUMULATIVE DEVELOPMENT

Other projects under consideration, approved or under construction in the vicinity of the Oakland Coliseum would affect future environmental conditions cumulatively. The primary cumulative effects considered in this EIR are transportation, noise, and air quality. The transportation analyses assume future conditions would be affected by traffic generation by the Stadium expansion, and by other development in the project vicinity. The analysis also assumes completion of certain roadway improvements, now in the planning or development stage, that would affect future traffic conditions.





Finally, as a separate project from the Stadium expansion and related improvements described and analyzed in this EIR, the Oakland-Alameda County Coliseum Complex, Inc. is reviewing plans to provide a new, larger Arena for indoor activities, as described below. The Arena project will be reviewed in a separate EIR that will take into account effects of Stadium expansion analyzed in this EIR. This EIR reviews cumulative effects of a new Arena, primarily in the transportation analysis. That analysis includes a scenario assuming completion of both projects, peak attendance at both an expanded Stadium and larger Arena, and two scenarios analyzing transportation effects during Arena construction, which would reduce existing parking available at the Coliseum Complex.

Enlarged Arena

The Oakland-Alameda County Coliseum Complex, Inc. and the Golden State Warriors basketball organization are proposing to develop a new 20,000-seat Arena at the Coliseum Complex. The new Arena would be constructed on the site of existing parking immediately south of the existing Arena; that is, in the southwesterly area of the complex. The existing 15,025-seat Arena west of the Stadium would continue to accommodate the Golden State Warriors and other events (concerts, circuses, ice shows) during construction. After the approximately one-year construction period for the new Arena, the existing Arena would be demolished. The site of the existing Arena would be available to replace parking lost at the new Arena site.

Other Cumulative Development

Three development projects have been approved in the study area that would potentially affect the fourteen study area intersections. This includes a "value-oriented retail development" along Oakport Street, the Hegenberger Retail Shopping Center at the intersection of Hegenberger Road and Baldwin Street, and the Cruise America R.V. Center along 66th Avenue (see Figure 21 in the Transportation section of this EIR).

NOTES - Project Description

- /1/ Hellmuth, Obata and Kassabaum Inc. Sports Facilities Group, Oakland-Alameda County Coliseum Complex Capital Improvement Plan, March 17, 1989.

IV. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A. PLANS, POLICIES AND APPROVAL PROCESS

The City of Oakland would review the proposal to expand the Coliseum Complex. The City would be responsible for environmental review, design review, conditional use permitting and building permitting of the Complex. The project is in conformance with the Land Use Element of the Oakland Comprehensive Plan, which designates the Coliseum area for public uses.

The proposed expansion of the Oakland Coliseum would fall under several other local, regional and state agency jurisdictions. The major areas of the project which would require agency review involve a) building the Hall of Fame over or adjacent to Damon Slough, b) expanding the practice fields adjacent to wetlands, and c) expanding the seating capacity of the Coliseum. The Hall of Fame or the practice field expansion could disturb wetland habitat under the jurisdiction of federal and state agencies (see also Section IV.E, Wetlands Issues). The following agencies may have some jurisdiction over the Oakland Coliseum Expansion project and may need to review the project environmental documentation (DEIR):

1. U.S. Army Corps of Engineers
2. U.S. Fish and Wildlife Service
3. U.S. Environmental Protection Agency
4. National Marine Fisheries Service
5. Bay Area Air Quality Management District
6. California Department of Fish and Game
7. State Regional Water Quality Board
8. Bay Conservation and Development Commission (BCDC)
9. Caltrans
10. Alameda County Airport Land Use Commission
11. Alameda County Flood Control and Water Conservation District
12. City of Oakland
13. City of Alameda

FEDERAL AGENCIES

U.S. Army Corps of Engineers (COE). Section 404 of the Federal Water Pollution Control Act gives the COE the responsibility for reviewing, in accordance with guidelines developed by the EPA, all projects that would include dredging or filling in

the waters of the United States. The EPA guidelines define the waters, and the COE jurisdiction, broadly. A Section 404 Permit would be required for dredging or filling of lakes, streams, wetlands, marshes, tidelands, or low-lying areas behind coastal dikes determined to be under COE jurisdiction. Upon receiving a specific application, COE posts a public notice for 30 days and receives comments. Then they notify the applicant of responses. Conflicts must be resolved for further consideration. The process takes at least 60 days. COE may require an environmental assessment on the application and either require an EIS or act as a co-lead or cooperating agency. COE may also require a 404(b)(1) alternatives analysis for a project.

COE would review development on or adjacent to the Damon Slough on the Coliseum site, and the wetlands adjacent to the practice fields on Doolittle Drive. The following three federal agencies would also be involved with the COE in reviewing potential project impact on the Slough and the wetlands: U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, and the National Marine Fisheries Service (see also Section IV.E, Wetlands Issues).

U.S. Fish and Wildlife Service (FWS). FWS reviews projects and works with COE whenever threatened or endangered species may be affected. The project sites are in areas where threatened or endangered species might be found. The project must comply with Section 7 of the Endangered Species Act of 1973 as amended, which requires that no species on the federal lists of endangered or threatened wildlife and plants, or its habitat, be diminished by federal action.

U.S. Environmental Protection Agency (EPA). EPA works with the COE on Section 404 Permits and with the Water Quality Control Board on Wastewater Disposal Permits. The project must meet the 404(b)(1) Guidelines developed by the EPA.

National Marine Fisheries Service (NMFS). NMFS would work with the COE on the Section 404 and Section 10 permits. (Section 10 regulates the obstruction or alteration of navigable waters of the United States.) NMFS comments on projects which have the potential of fish of commercial importance of their habitats. The COE incorporates these comments into their permit evaluation process.

STATE AGENCIES

Bay Area Air Quality Management District (BAAQMD). BAAQMD requires an Authority to Construct Permit, to construct or modify facilities or equipment that may emit pollutants into the atmosphere from a stationary source. The project may increase traffic in the area, which would potentially degrade air quality. The project must meet emissions standards in "New Source Review Rules", and ambient air quality standards and emissions limits for the specific type of facility or equipment (see Air Quality, Section IV.C).

California Department of Fish and Game (CDFG). CDFG requires an Endangered Species Consultation whenever a threatened or endangered species or special status plant may be affected, such as by potential development near or on wetlands. The proposed project must comply with the California Endangered Species Act of 1985 and Section 1900 of the California Fish and Game Code (see Wetlands Issues, Section IV.E).

Regional Water Quality Control Board (RWQCB). A National Pollutant Discharge Elimination System (NPDES) Permit would be required for the discharge of wastes into surface waters from a confined pipe or channel. The project must be consistent with Section 13260 of the State Water Code, the regional board's adopted water quality objectives as reflected in the adopted Water Quality Control Plan for the San Francisco Basin ("Basin Plan"), and the Areawide Waste Treatment Management ("208") Plan. Projects must also result in no net loss of wetland acreage or value. Waste Discharge Requirements may be established for any discharge to surface or groundwaters (see Wetlands Issues, Section IV.E).

San Francisco Bay Conservation and Development Commission (BCDC). A Development Permit may be required for dredging, filling for all tidal areas or land use changes within 100 feet of tidal areas of the Bay. The project must be consistent with the McAteer-Petris Act and the San Francisco Bay Plan. Damon Slough is a tidal area of the Bay and therefore any proposed development in the immediate area would fall under BCDC jurisdiction review. Construction of the Hall of Fame across or adjacent to the slough would require a BCDC permit.

Department of Transportation (Caltrans). An Encroachment Permit may be required for work within a state highway right-of-way and for access to and from a state highway (I-880 or SR 61 - Doolittle Drive). This requirement would apply to anything placed in, under or over any portion of a highway and any driveways or road connected to a state highway.

Port of Oakland. The existing practice fields site is leased from the Port of Oakland, making the Port a Responsible Agency under CEQA. The Port would be responsible for evaluating the EIR before granting any approvals (i.e., permits or leases) to users of the facility.

Alameda County Airport Land Use Commission (ALUC). The practice fields site is near Metropolitan Oakland International Airport and in the ALUC safety zone for approach to Runaway 15/33. The safety zone restricts occupancy by no more than 25 persons per net acre over an eight-hour period. The project must also be consistent with the Airport Land Use Policy Plan. FAR Part 77 Height Restriction would limit the height of new construction at the practice field site to 60 to 80 feet.

Alameda Flood Control and Water Conservation District. The project sites are in areas designated by the Federal Emergency Management Agency as Flood Zone B, areas between the limits of the 100-year flood and the 500-year flow. The Stadium is near Damon Slough, a channel under the jurisdiction of the Alameda Flood Control and Water conservation District. For these two reasons, the project is subject to review and comment by the District. The project must comply with the water codes.

City of Alameda. The City of Alameda would review the the potential changes in access to the practice field site along Doolittle Drive and Harbor Bay Parkway. Since the Harbor Bay Parkway, which borders the practice field site to the west, is in the City of Alameda, the City would need to concur on traffic improvements related to the expansion of the practice fields.

B. TRANSPORTATION

INTRODUCTION .

This section describes the existing transportation system within the study area adjacent to the Oakland/Alameda County Coliseum Complex, including traffic, transit, bicycles, and pedestrians.

The environmental setting is described both in terms of existing (1989) non-event-conditions and in terms of existing event day conditions. Existing traffic conditions have been assessed for three non-event scenarios.

- Sunday noon peak hour
- Sunday p.m. peak hour
- Weekday p.m. peak hour

Six separate event day scenarios have been developed to illustrate the traffic characteristics various football and baseball events at the Coliseum Complex. The following event conditions have been analyzed:

- Sunday football game - noon hour (inbound flows)
- Sunday football game - p.m. peak hour (outbound flows)
- Monday night football game - p.m. peak hour (inbound flows)
- Weekday baseball game - p.m. peak hour (outbound flows)
- Weekday night baseball game - p.m. peak hour (inbound flows)
- Weekday night baseball plus basketball - p.m. peak hour (inbound flows)

It should be noted that project scenarios evaluate transportation effects of additional patronage that would be accommodated by Stadium expansion. Base conditions described include traffic generated by existing Stadium capacity.

SETTING

Traffic Conditions

Roadway System

This section assumes the following directional convention: The Nimitz Freeway (I-880) and all parallel streets are north-south roadways.

The Coliseum Complex is located on the east side of Highway 880 with access from both the Hegenberger Road / Interstate 880 interchange and the 66th Avenue / Interstate 880 interchange (see Figure 8). Regional access to the area is provided by the Nimitz Freeway (Interstate 880), which runs the length of the East Bay from the Bay Bridge to San Jose. Secondary regional access is provided via the MacArthur Freeway (Interstate 580).

Nimitz Freeway. The Nimitz Freeway (I-880) bounds the project to the west and is an eight-lane facility within the study area. For the purpose of this DEIR, regional travel on the Nimitz Freeway bound towards the Bay Bridge is considered as northbound traffic, and travel bound towards San Jose as southbound traffic.

Coliseum Way. Coliseum Way serves as the eastern frontage road for Interstate 880 in the project vicinity. Coliseum Way provides four lanes of travel extending from High Street to Hegenberger Road. At 66th Avenue, Coliseum Way is offset by several hundred feet. To the south of Hegenberger Road, Coliseum Way becomes Edes Avenue, which provides access south to 98th Street.

Oakport Street. Oakport Street serves as the western frontage road for Interstate 880 in the project vicinity. Oakport Street is a two-lane, continuous route from High Street to Hegenberger Road. South of High Street, Oakport Street crosses the southbound on-ramp to Interstate 880 at a stop-sign controlled intersection. The T-intersection of Oakport Street and 66th Avenue is controlled by a multi-way stop sign installation. At its southern terminus, Oakport Street forms a junction with the southbound off-ramp to Hegenberger Road.

MacArthur Freeway. The MacArthur Freeway (I-580) is an eight-lane north-south facility in the study area. It is located approximately three miles east of the Coliseum Complex. Access to local streets serving the Coliseum area is provided via interchanges at Seminary Avenue and Edwards Avenue.



FIGURE 8
ROADWAY NETWORK - PROJECT VICINITY

Hegenberger Road. Hegenberger Road provides a continuous east-west route between the Oakland Airport and East 14th Street. In the study area, it is a six to eight-lane facility with limited on-street parking. At San Leandro Street, Hegenberger Road is a grade separated overpass that clears the Southern Pacific Railroad and BART. To the east of E. 14th Street, Hegenberger Road becomes 73rd Avenue and Edwards Avenue, which terminate at Interstate 580. The Hegenberger Road / Interstate 880 freeway interchange is one of the two primary access points to the Coliseum Complex.

66th Avenue. 66th Avenue is the other major east-west arterial that provides primary access from Interstate 880 to the Coliseum Complex. It is a four-lane facility that runs from Interstate 880 to E. 14th Street. Parking is prohibited along both sides of the street.

High Street. High Street is a four-lane arterial that connects the City of Alameda with Oakland and both Interstate 880 and Interstate 580. It runs in an east-west alignment to the north of the Coliseum Complex. The High Street / Interstate 880 interchange is used as a secondary access to Interstate 880 by Coliseum patrons travelling to and from the north. Access to the interchange is gained via the frontage roads at Oakport Street and Coliseum Way.

San Leandro Street. San Leandro Street is a north-south arterial located immediately east of the Coliseum Complex. It runs roughly parallel to Interstate 880 from Fruitvale Avenue south to Davis Street (Route 61) in San Leandro. San Leandro Street provides direct access to the Coliseum BART station drop-off area and parking lot.

East 14th Street. East 14th Street is a major north-south arterial located between Interstate 880 and Interstate 580. It runs throughout the City of Oakland and continues south through San Leandro into Hayward. Near the study area, East 14th Street is bounded primarily by residential and light commercial uses.

Edgewater Drive. Edgewater Drive is a four-lane facility on the west side of Interstate 880 that is bounded by employment uses. From its intersection with Hegenberger Road, Edgewater Drive curves to the north and forms its northern terminus immediately west of the 66th Avenue / Interstate 880 interchange.

Traffic Levels

Current traffic conditions at key locations within the immediate vicinity of the Coliseum Complex and the surrounding roadways were determined through the collection of 24 hour machine counts on major routes and peak hour turning movement counts at individual intersections. The counts were conducted in August and September, 1989. P.M. peak hour turning movement count data was used to estimate the Average Daily Traffic (ADT) of intersecting roadways at locations where machine count data was unavailable.

Coliseum Event Travel Patterns

The existing characteristics of both football and baseball patrons at the Oakland Coliseum were determined through surveys of traffic, transit, and pedestrian routes to the study area.

Event Scenarios. Six event scenarios were chosen to provide a basis for assessing the peak impacts of activities during both the weekday and weekend periods. The scenarios reflect varying levels of attendance at both the Coliseum and Arena facilities. Project impacts only include those attributable to the increased attendance at Stadium events. Scenarios including Arena activities were analyzed to provide a more accurate picture of future traffic than would be available from analyzing the Stadium expansion alone.

The football scenarios (Scenarios 1, 2, and 3) include both Sunday and Monday night games. Both inbound and outbound traffic to a typical Sunday game (1:00 p.m. start time) were assessed, even though the outbound travel flows represent the peak project traffic conditions. This dual analysis was made because background traffic conditions in the study area are heavier at some locations during the Sunday noon period than during the Sunday p.m. peak hour. The Monday night football game was assessed for inbound traffic only (p.m. peak hour), as outbound travel would occur during

the late evening hours when very light background traffic would be present. All three football scenarios included a medium-sized event at the Arena facility, with attendance levels similar to the circus that was surveyed. A basketball event at the Arena was not assessed in conjunction with the football scenarios, because the National Basketball Association (NBA) avoids scheduling conflicts between the two sports during the months of November, December and January.

The baseball scenarios (Scenarios 4 and 5) were based on a weekday day game and a weekday night game. A weekend baseball scenario was not assessed, because it would be similar to, but with slightly lower impacts than, the weekend football scenarios. The two baseball scenarios assume a simultaneous medium-sized event at the Arena.

The baseball-plus-basketball scenario (Scenario 6) includes a weekday night baseball game of average attendance (17,300) plus a concurrent maximum crowd at the proposed new, enlarged Arena facility (20,000-person attendance) on a weekday night. This scenario, which would occur only during the basketball and baseball schedule overlap in April, depicts the highest combined weekday night attendance levels likely to occur at the two Coliseum Complex facilities.

The six scenarios that were assessed would occur for a between 62 and 76 days during any particular calendar year. A summary of the potential number of dates that each scenario would occur during the year is shown below:

Scenario 1:	Sunday football game	- 8 to 11 days per year
Scenario 2:	Sunday football game	- 8 to 11 days per year
Scenario 3:	Monday night football	- 1 day per year
Scenario 4:	Weekday day baseball	- 11 days per year
Scenario 5:	Weekday night baseball	- 40-44 days per year
Scenario 6:	Weekday night baseball plus basketball	- 2-9 days per year

Estimates of numbers of event dates were based on the 1989 and 1990 Oakland A's home baseball schedules, the 1989-1990 Golden State Warriors home schedule and the 1989 San Francisco's 49'ers home football schedule. Ranges were calculated to encompass the maximum feasible number of post-season home games.

Event Surveys. The primary information for football events was obtained through an extensive count program that was conducted on Saturday, August 26, 1989, during a pre-season football game between the Los Angeles Raiders and the Houston Oilers. This survey included counts of vehicular traffic, BART ridership, pedestrian activity, charter bus activity, and AC Transit ridership on all routes to the Stadium. The locations of parked vehicles, both in and adjacent to the Stadium facility, were also determined. In addition to the sellout football game, a circus that was being held concurrently at the Arena was surveyed. It should be noted that, although the football game began at 7:00 p.m. and the circus at 8:00 p.m., both events ended almost simultaneously at 10:30 p.m.

Surveys of baseball activity were conducted on September 12th and 13th, 1989, during weekday games for the Oakland A's (vs. Milwaukee Brewers). The weekday games were studied to identify the impact of day and night games during the week on the typical p.m. peak commute period around the Stadium. The first game, on Tuesday, September 12th, was a night game that started at 7:05 p.m., which represents a typical early evening game start time during the baseball season. The baseball game of Wednesday, September 13th also had a typical start time for a mid-week day game of 12:15 p.m.

The traffic, transit, parking, and pedestrian data from these activities was used to establish existing travel characteristics that are used to identify the impacts of each alternative event on the transportation network. These characteristics includes such factors as the modal split, trip generation, trip distribution, and parking distribution. The following section also includes a discussion of the traffic management plan that is currently applied at the Stadium during events by the Oakland Police Department and the California Highway Patrol.

Modal Split. The modal split information provided below identifies how patrons travel to the Coliseum Complex, apportioned between mass transit and private auto trips, for each of the different activity alternatives. The modal split data indicates how many people come by auto, BART, AC Transit, charter bus, and other modes. This data is summarized in Table 2 for each of the six event scenarios.

The modal split data indicates that between 74% and 85% of the patrons come to Coliseum events by private automobile. The average auto occupancy is high

OAKLAND-ALAMEDA COUNTY COLISEUM EXPANSION
Draft Environmental Impact Report

TABLE 2: MODAL SPLIT SURVEY DATA - COLISEUM EVENT SCENARIOS

	Scenario 1	Scenario 2	Scenario 3/a/	Scenario 4	Scenario 5	Scenario 6
	Football Sunday Noon (%)	Football Sunday P.M. (%)	Football Monday P.M. (%)	Baseball Day Weekday P.M. (%)	Baseball Night Weekday P.M. (%)	Baseball & Basketball Night Weekday P.M. (%)
Travel Mode						
Auto Driver	27	27	(27)	28	27	27
Auto Passenger	46	46	(46)	50	58	58
BART	21	21	(21)	20	13	13
AC Transit	1	1	(1)	1	1	1
Charter Buses	4	4	(4)	-	-	-
Walk/other	1	1	(1)	1	1	1
TOTAL	100	100	(100)	100	100	100
Attendance/b/	49,000	49,000	(49,000)	27,300	26,700	17,300/c/

- /a/ The travel characteristics for Monday night football patrons were assumed to be similar to those for weekend football games.
- /b/ This attendance figure in all scenarios includes only Coliseum patrons, not Arena event patrons assumed in the scenarios.
- /c/ This scenario also includes the addition of a sell-out basketball game in the Arena in April (20,000 patrons) not part of this attendance figure.

SOURCE: Korve Engineering, Inc.

for patrons using the Coliseum parking lot, ranging from 2.8 to 3.4 persons per vehicle. The high auto occupancy rates result in a low level of actual auto drivers, ranging from 27% to 28%, and a high level of patrons who travel to the event as auto passengers (47% to 58%). The level of BART use ranges from 13% to 21%, depending upon the day of the week and the time of day. Transit use tends to be higher for weekend activities and for weekday day games. Charter buses at the pre-season football game carried approximately 4% of the total football patrons.

Parking Distribution. The Coliseum Complex provides approximately 9,000 stalls of on-site parking. The actual number of vehicles that can be accommodated varies due to a number of factors including whether portions of the parking lot are reserved for other uses (charter buses, event storage, media, etc.) and the level of parking lost as a result of tailgating. This section provides an estimate of how many vehicles travel to the event for each scenario and where they park.

The total number of vehicles that travelled to the Coliseum Complex for the football event was determined from data provided by the Coliseum for on-site lots and surveys of the adjacent off-site surface lots and on-street parking areas. An estimated 14,400 vehicles parked in the vicinity of the Coliseum for the football event, with 8,300 parking in the on-site lot and 6,100 parking in off-site locations. Figure 9 shows the distribution of parking by location for a typical football event.

The weekday baseball games attracted an estimated 9,000 vehicles for the day game and 8,600 vehicles for the night game. The majority of the auto drivers destined for weekday day games park in the Coliseum lot, as off-site parking is generally unavailable at the adjacent lots that serve retail and employment uses. These lots are typically free only on weekends. Table 3 provides a summary of the total parking summary and parking locations for each scenario.

The Arena activity for Scenarios 1 through 5 would attract approximately 1,430 vehicles to the study area. During football activities, an estimated 800 vehicles would park in the on-site lot and 630 at off-site locations. During the weekday day baseball event, an estimated 1,300 vehicles would park in the on-site lot and 130 vehicles at off-site locations (e.g., the BART lot). During the weekday night baseball event an Arena event would attract an estimated 1,200 vehicles to the on-site lot and 230 vehicles to off-site locations.

The weekday night concurrent basketball and baseball games (Scenario 6) would attract an estimated total of 10,100 vehicles for the activities. About 8,300 vehicles would park in the on-site Coliseum lot, with another 1,800 at off-site locations.

Trip Generation. The vehicular trip generation analysis establishes the estimated number of autos destined for the site on both a daily and a peak hour basis. As described above, the total number of vehicles that park in the Coliseum vicinity for events ranges from about 8,600 to about 14,400 autos. A summary of the daily and peak hour trip generation for each scenario is shown in Table 4.

The daily vehicle trip generation for each scenario is based on the number of vehicles that park in the vicinity of the Coliseum Complex that are related to events at the facility. Each vehicle that is attracted to the facility for a single event would generate a

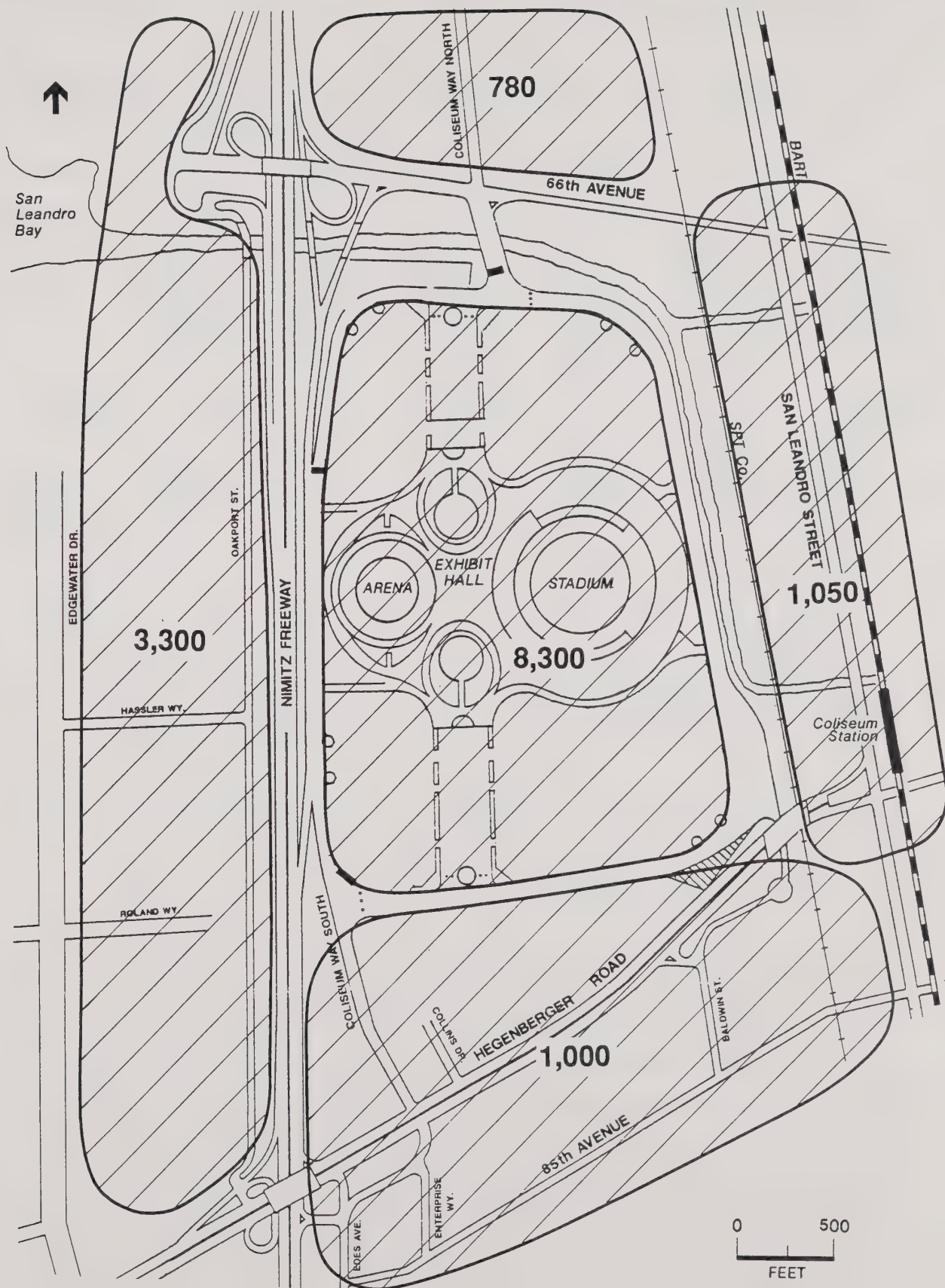


FIGURE 9
PATRON PARKING LOCATIONS -
SUNDAY FOOTBALL GAME

TABLE 3: PARKING DISTRIBUTION - BASELINE COLISEUM EVENT SCENARIOS

	Scenario 1	Scenario 2	Scenario 3/a/	Scenario 4	Scenario 5	Scenario 6
<u>Location</u>	<u>Football Sunday Noon</u>	<u>Football Sunday P.M.</u>	<u>Football Monday P.M.</u>	<u>Baseball Day Weekday P.M.</u>	<u>Baseball Night Weekday P.M.</u>	<u>Baseball & Basketball Night Weekday P.M.</u>
On-site	8,300	8,300	8,300	7,600	7,400	8,300
Off-site						
West area	3,300	3,300	3,300	400	-	300
North area	780	780	780	100	150	150
East area	1,050	1,050	1,050	810	800	750
South area	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>120</u>	<u>280</u>	<u>600</u>
TOTAL	14,430	14,430	14,430	9,030	8,630	10,100

/a/ Monday night football parking distribution was assumed to be similar to that for weekend football games.

/b/ Total vehicles includes all vehicles attributable to Stadium events and Arena events combined.

SOURCE: Korve Engineering, Inc.

total of two trips, one inbound and one outbound. The peak hour trip generation is then established for each of the event scenarios, based on peak hour count data. The peak hour activity for Monday night football was assumed to be similar to Sunday football games.

Scenario 1, which represents the inbound traffic flows for a Sunday football game, would generate 14,450 inbound trips, 28,900 daily trips and 5,050 peak hour trips. The 5,050 peak hour trips represent 17.5% of the total daily trips (i.e., both inbound and outbound) to the football game, or 35% of the inbound trips that occur prior to the event. The outbound trip generation for a Sunday football game (Scenario 2) includes a total of 10,100 trips during the hour following the game, or 70% of the 14,450 outbound automobiles. For Scenario 3, Monday night football, it has been assumed that 40% of the patrons, or 5,770 vehicles, would arrive between 4:00 and 5:00 p.m., which is the peak commute hour for the local street system.

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TABLE 4: VEHICLE TRIP GENERATION LEVELS - BASELINE COLISEUM EVENT SCENARIOS

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
	Football Sunday Noon	Football Sunday P.M.	Football Monday P.M.	Baseball Day Weekday P.M.	Baseball Night Weekday P.M.	Baseball & Basketball Night Weekday P.M.
Daily Auto Trips/a/	28,860	28,860	28,860	18,060	17,260	20,200
Street Peak Hour	12-1 p.m.	4-5 p.m.	4-5 p.m.	4-5 p.m.	4-5 p.m.	4-5 p.m.
Peak Hour Auto Trips/b/	5,050	10,100	5,770	900	2,590	3,030
Percent of Daily trips	17%	35%	20%	5%	15%	15%

- /a/ Auto trips to and from the Coliseum Complex, including both Stadium and Arena events. Daily auto trip estimates are based on parking totals given in Table 3.
- /b/ Vehicle trips during the peak hour on street system.

SOURCE: Korve Engineering, Inc.

Scenario 4 analyzes the effect of a weekday day baseball game on the p.m. peak hour traffic. A day baseball game would generate only 900 vehicle trips between 4:00 and 5:00 p.m, about 10% of the total outbound flow, because a substantial portion of the outbound trips from a day baseball game occurs in the hour immediately following the event (3:00 to 4:00 p.m.). Scenario 5, which represents the inbound flows for a weekday night baseball game, would generate 17,300 daily trips and 2,590 peak hour trips. The peak hour flow of 2,590 vehicle trips indicates that 30% of the total inbound trips would occur between 4:00 and 5:00 p.m. The majority of the inbound trips for a night baseball game occurs in the hour immediately preceding the event (6:00 to 7:00 p.m.). Scenario 6, which represents the inbound traffic flows on a night when a baseball game is played in the Stadium and a sell-out basketball game is played concurrently in the new Arena would generate 20,200 daily trips and 3,030 peak hour trips. The 3,030 peak hour trips represent 15% of the total daily trips generated by the events, or 30% of the inbound trips that occur prior to the games.

Trip Distribution. The vehicle trip distribution assumptions are based on a review of traffic flows on both the local street system, the freeway system and the parking locations in the vicinity of the Coliseum Complex. The analysis of daily traffic counts provided information on an hourly basis regarding the level of traffic on all routes accessing the Stadium. The focus of the distribution assessment was the hour immediately following the football game that was surveyed (August 26, 1989), during which there was heavy exiting activity. In addition, since the game ended at 10:30 p.m. on a Saturday evening, the non-game activity on study area roadways was very low.

The distribution of vehicle trips on the local roadway network is shown in Table 5. About 73% of the traffic uses Interstate 880, 5% of the traffic uses Interstate 580, and 22% of the traffic uses local streets. This distribution pattern is shown in Figure 10.

Stadium Traffic Management Plan. The Oakland Police Department has developed a plan entitled "Coliseum Traffic Control for Major Events" that serves as a guideline for a consistent approach to traffic control for events at the Coliseum Complex. The plan identifies the desired flow patterns to both the primary and overflow lots for both inbound and outbound traffic at a major event. the plan also provides specific instructions on how to manually direct traffic at the intersections of Hegenberger Road / Coliseum Way and 66th Avenue / Coliseum Way, which are the two key vehicle access points for the Coliseum. The prescribed inbound and outbound flow patterns in the study area are shown in Figures 11 and 12, respectively.

Intersection Service Levels

To evaluate the existing traffic conditions, as well as provide a basis for comparison of conditions before and after project generated traffic is added to the street system, the Level of Service (LOS) was evaluated at critical intersections. The LOS evaluation indicates the degree of congestion which occurs during peak travel periods and is the principal measure of roadway performance.

Existing traffic conditions at signalized intersections have been evaluated for the peak hour traffic flow using the "Planning Methodology" from Transportation Research Board Circular 212. This methodology is widely used in EIRs and provides generally conservative estimates of intersection capacity compared to most other techniques.

TABLE 5: TRIP DISTRIBUTION - OUTBOUND TRAFFIC FLOW

<u>Route Used</u>	<u>Direction</u>	<u>Percentage</u>
Interstate 880		
High Street	northbound	8
66th Avenue	northbound	21
Hegenberger	northbound	13
High Street	southbound	5
66th Avenue	southbound	11
Hegenberger	southbound	15
Interstate 580		
Edwards Avenue	northbound	5
Local Streets		
San Leandro	northbound	7
E. 14th Street	northbound	1
Coliseum Way	southbound	1
Baldwin	southbound	1
San Leandro	southbound	6
E. 14th Street	southbound	2
66th Avenue	eastbound	2
High Street	eastbound	1
High Street	westbound	1
TOTAL DISTRIBUTION		100

SOURCE: Korve Engineering, Inc.

Table 6 defines the Levels of Service, which range from "A" free flow conditions, to "F" jammed conditions. LOS A,B, and C are generally considered satisfactory service levels, while LOS D is marginally acceptable. LOS E conditions are considered undesirable and LOS F conditions unacceptable, although such conditions frequently occur at heavily-loaded urban intersections in the Bay Area.

The level of service is determined by calculating the volume / capacity ratio (v/c) for each time period at the study intersections and comparing the result to the definitions in Table 6. In this study, the volumes used to calculate the v/c ratio are peak hour

Source: Kolve Engineering, Inc.

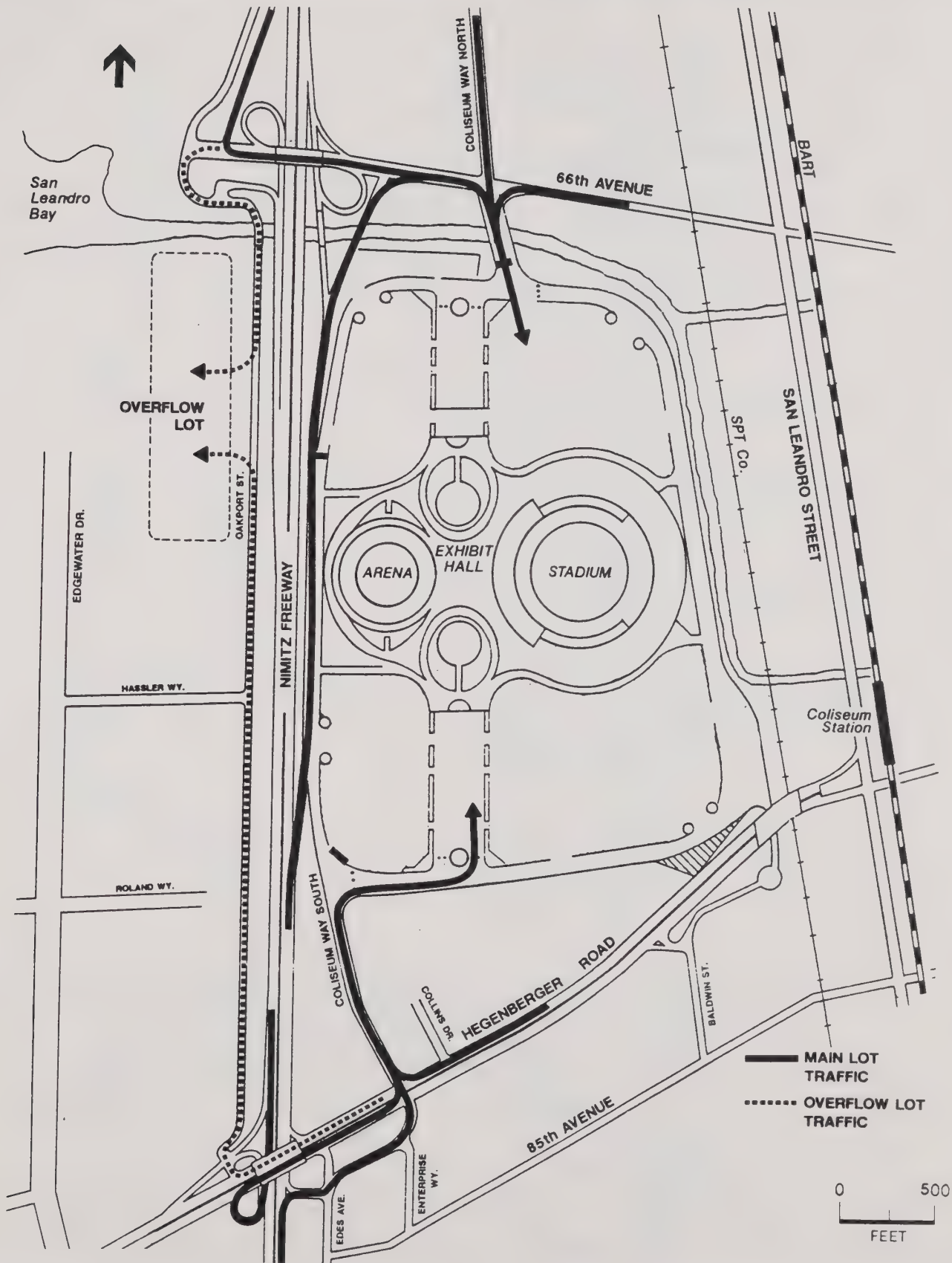


FIGURE 11
TRAFFIC CONTROL PLAN -
INBOUND FLOWS

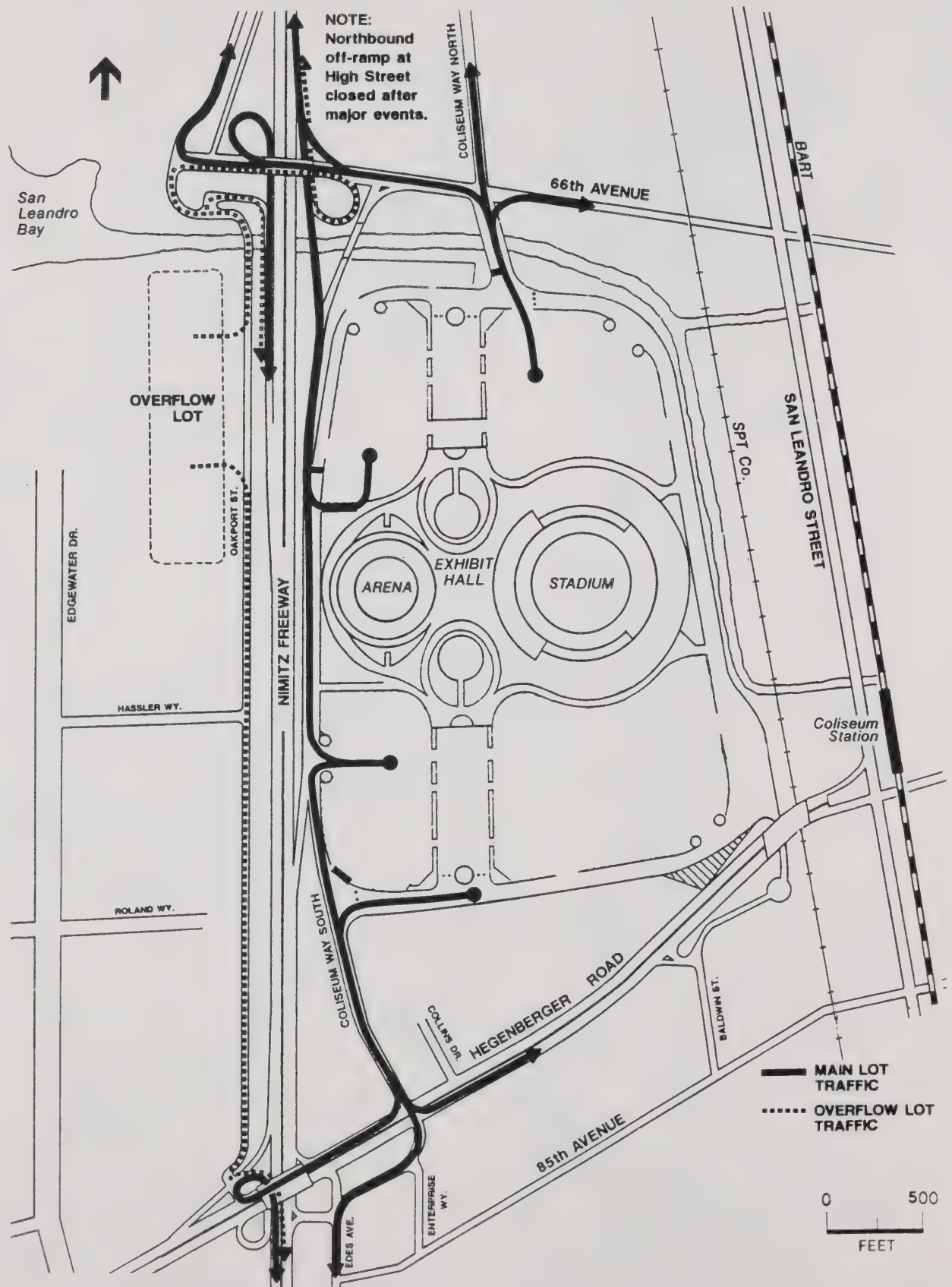


FIGURE 12
TRAFFIC CONTROL PLAN -
OUTBOUND FLOWS

TABLE 6: LEVEL OF SERVICE DEFINITIONS - SIGNALIZED INTERSECTIONS

<u>Level Of Service</u>	<u>Stopped Delay (Sec. / Veh.)</u>	<u>Volume to Capacity Ratio</u>	<u>Description of Traffic Condition</u>
A	<5.0	0.0 - 0.59	Insignificant Delays: No approach phase fully utilized and no vehicle waits longer than one red indication.
B	5.1 - 15.0	0.60 - 0.69	Minimal Delays: An occasional approach phase is fully utilized. Drivers begin to feel restricted.
C	15.1 - 25.0	0.70 - 0.79	Acceptable Delays: Major approach phase may become fully utilized. Most drivers feel somewhat restricted.
D	25.1 - 40.0	0.80 - 0.89	Tolerable Delays: Drivers may wait through more than one red indication. Queues may develop but dissipate rapidly, without excessive delays.
E	40.1 - 60.0	0.90 - 0.99	Significant Delays: Volumes approaching capacity. Vehicles may wait through several signal cycles and long queues of vehicles form upstream.
F	<60.0	N/A	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections and queues may form which do not dissipate.

SOURCE: Highway Capacity Manual, Highway Research Board, Special Report No. 87, Washington, D.D. 1965; Interim Materials on Highway Capacity, Transportation Research Board Circular 212, Washington D.D., 1980
Highway Capacity Manual, Transportation Research Board Special Report No. 209, Washington, D.C., 1985; Korve Engineering, Inc.

intersection approach volumes. The intersection capacity in the V/C ratio is a theoretical capacity which depends on the lane configurations and the phasing of the traffic signals at the intersections. The existing intersection configurations are shown in Figure 13.

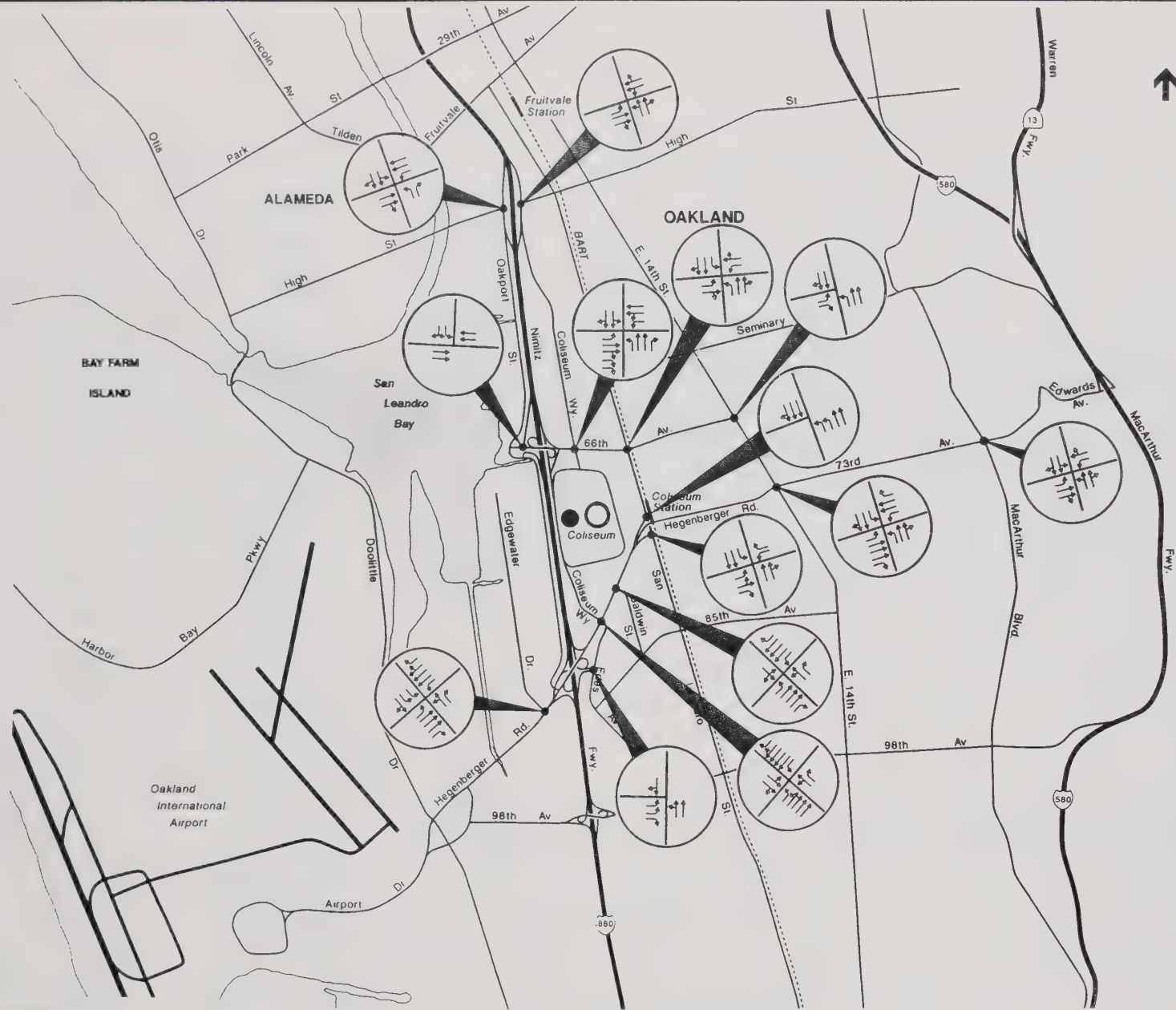


FIGURE 13
EXISTING INTERSECTION -
LANE CONFIGURATIONS

Existing Service Levels. The existing operating conditions are identified in Table 7 for the key signalized locations within the Coliseum study area. The intersections of Hegenberger / Edgewater and High / Coliseum operate at LOS F during the weekday p.m. peak hour. The intersection of High / Oakport operates at LOS D during the weekday p.m. peak hour. These three intersections operate at LOS C or better during the other two periods that were analyzed. The remaining locations studied operate at LOS C or better during all three time periods that were analyzed.

The v/c ratios at two intersections are over 1.00 for existing conditions, when calculated according to the Planning Method; however, v/c ratios over 1.00 are in practice impossible, since true capacity must be at least as great as the volume served. The very long queues, long signal cycles and aggressive commuters result in a service volume which exceeds the theoretical capacity by as much as 8%, based upon the counted turning movements. For purposes of comparison with future conditions, additional volumes forecast at this location are reported without reduction. Traffic volumes in excess of theoretical capacity should be treated as "demand" figures, since the number of peak hour vehicles served may not increase significantly. (However, the length of time during which the intersection would operate in an at-capacity condition would lengthen.)

The intersection of Harbor Bay / Doolittle Drive is located in the City of Alameda, immediately adjacent to the practice fields that were used by the Raiders until the end of the 1981 season. This T-intersection operates at LOS A conditions ($v/c = 0.45$) under existing traffic levels. When the practice fields were actively used for football purposes, a median opening was provided, on Harbor Bay Parkway approximately 200 feet west of Doolittle Drive, for left turn access into the site. The median has since been closed, because there is no substantive activity at the site.

Existing Plus Coliseum Event Scenarios - Service Levels. The assessment of the six Coliseum event scenarios is based on the addition of the individual event traffic to existing traffic volumes during the Sunday noon, Sunday p.m., and weekday p.m. periods. The analysis also includes the addition of traffic generated by an event at the Arena similar to the circus shows of August 26, 1989. These shows, which were held in conjunction with the Raider pre-season football game, attracted up to 6,800 patrons. The Arena activity for Scenario 6 is a basketball game. The service levels for all six event scenarios are shown in Table 8.

TABLE 7: EXISTING (1989) CONDITIONS - PEAK HOUR LEVELS OF SERVICE AND VOLUME / CAPACITY RATIOS

<u>Intersection</u>	<u>Sunday Noon</u> <u>LOS</u>	<u>V/C</u>	<u>Sunday P.M. Peak</u> <u>LOS</u>	<u>V/C</u>	<u>Weekday P.M. Peak</u> <u>LOS</u>	<u>V/C</u>
Hegenberger / Edgewater	A	0.33	A	0.38	F	1.07
Hegenberger / Coliseum	A	0.33	A	0.34	B	0.62
Hegenberger / Baldwin	A	0.26	A	0.24	A	0.39
Hegenberger / E. 14th	A	0.38	A	0.25	B	0.61
San Leandro / 75th Avenue	A	0.21	A	0.19	A	0.54
San Leandro / 73rd Avenue	A	0.15	A	0.15	A	0.36
73rd Avenue / MacArthur	B	0.68	B	0.64	/b/	/b/
66th Avenue / Coliseum	A	0.26	A	0.28	A	0.42
66th Avenue / San Leandro	A	0.45	A	0.44	C	0.76
66th Avenue / E. 14th	A	0.49	A	0.53	A	0.59
High / Coliseum	B/C	0.70	C	0.72	F	1.04
High / Oakport	B	0.64	A	0.56	D	0.84
66th Ave. / SB 880 ramp /a/	A	0.13	A	0.09	A	0.32
Edes Ave. / NB 880 ramp	A	0.24	A	0.24	A	0.51

/a/ This location was assumed to be a signalized intersection for analysis.

/b/ Weekday traffic counts not available.

SOURCE: Korve Engineering, Inc.

In the first scenario, which identifies traffic levels for the noon peak on Sunday with a football game, all intersections experience acceptable service levels except the intersection of High / Oakport. The intersection of High / Oakport operates at LOS D/E during the Sunday noon peak hour. The intersection of 73rd / MacArthur would operate at LOS D, indicating heavy use of the 73rd / Hegenberger corridor to the Stadium from Interstate 580.

The second football scenario examines exiting traffic from a Sunday football game during the p.m. peak hour. Four of the study intersections operate at LOS F during the peak hour following the end of the football game. These include the intersections of Hegenberger / Coliseum, 66th / Coliseum, 66th / San Leandro, and High / Coliseum. The post-game traffic at the first two of these intersections is controlled by police during major events, while the northbound off-ramp to High Street is closed to reduce impacts at the High / Coliseum intersection.

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TABLE 8: EXISTING (1989) PLUS COLISEUM EVENT SCENARIOS - PEAK HOUR LEVELS OF SERVICE AND VOLUME / CAPACITY RATIOS /a/

<u>Intersection</u>	<u>Football</u>		<u>Baseball</u>		<u>Baseball & Basketball</u>	
	<u>Sunday Noon</u>	<u>Sunday P.M. Peak</u>	<u>Monday P.M. Peak</u>	<u>Day Game P.M. Peak</u>	<u>Night Game P.M. Peak</u>	<u>Night Game P.M. Peak</u>
Hegenberger/Edgewater	A (0.35)	A (0.48)	F (1.07)	F (1.07)	F (1.07)	F (1.07)
Hegenberger/Coliseum	C (0.79)	F (1.09)	F (1.23)	C (0.72)	C (0.81)	D (0.87)
Hegenberger/Baldwin	A (0.36)	A (0.56)	A (0.49)	A (0.40)	A (0.42)	A (0.44)
Hegenberger/E. 14th	A (0.50)	C (0.75)	B (0.68)	B (0.62)	B (0.64)	B (0.65)
San Leandro/75th Avenue	A (0.37)	A (0.29)	C (0.75)	A (0.54)	B (0.64)	B (0.64)
San Leandro/73rd Avenue	A (0.23)	A (0.30)	A (0.47)	A (0.37)	A (0.41)	A (0.41)
73rd Avenue/MacArthur	D (0.86)	C (0.76)	-	-	-	-
66th Avenue/Coliseum	C (0.75)	F (1.09)	F (1.15)	A (0.51)	A (0.59)	B (0.62)
66th Avenue/San Leandro	C (0.74)	F (1.15)	F (1.09)	D (0.83)	E (0.93)	E (0.95)
66th Avenue/E. 14th	A (0.54)	C (0.72)	B (0.65)	A/B (0.60)	B (0.62)	B (0.62)
High/Coliseum	C (0.79)	F (1.27)	F (1.14)	F (1.08)	F (1.08)	F (1.08)
High/Oakport	D/E (0.90)	A (0.58)	F (1.25)	D (0.84)	F (1.06)	F (1.09)
66th Ave./SB 880 ramp	A (0.41)	A (0.41)	A (0.59)	A (0.33)	A (0.41)	A (0.43)
Edes Ave./NB 880 ramp	A (0.56)	A (0.31)	D (0.88)	A (0.52)	B (0.65)	B (0.67)

/a/ For example, C (0.75) identifies the intersection as operating at LOS C with a volume/capacity ratio of 0.75.

SOURCE: Kolve Engineering, Inc.

The Monday night football scenario generates the highest traffic levels on the roadway network, as six of the intersections operate at LOS F during the p.m. peak hour. These six include the intersections of Hegenberger / Edgewater, Hegenberger / Coliseum, 66th / Coliseum, 66th / San Leandro, High / Coliseum, and High / Oakport. The intersection of Edes / northbound Interstate 880 off-ramp operates at LOS D, indicating tolerable delays.

The day and evening weekday baseball games add lower traffic levels to the roadway network, but result in undesirable service levels at several intersections because of the high level of background traffic on weekdays. Scenario 4 (day baseball) results in LOS F conditions at two intersections; Hegenberger / Edgewater and High / Coliseum intersections, both of which operate at LOS F under existing conditions.

The fifth scenario, which assesses night baseball conditions, results in LOS F conditions at three intersections and LOS E conditions at one intersection. The intersections of Hegenberger / Edgewater, High / Coliseum, and High / Oakport already operate at LOS F due to moderate game-related traffic and heavy background traffic on High Street destined for Alameda. The intersection of 66th / San Leandro operates at LOS E conditions.

The final scenario, which identifies conditions for both a basketball and a baseball event during a weekday evening, results in LOS F conditions at three intersections and LOS E conditions at one intersection. The intersections of Hegenberger / Edgewater, High / Coliseum, and High / Oakport now operate at LOS F due to game-related traffic and heavy background traffic on High Street destined for Alameda. The intersection of 66th / San Leandro currently operates at LOS E conditions.

Interchange Conditions

Three interchanges along Interstate 880 and one along Interstate 580 were analyzed to determine the quality of existing traffic conditions (see Table 9) on freeway ramps at key interchanges adjacent to the Coliseum Complex. These three included the interchanges at High Street, 66th Avenue, Hegenberger Road, and Edwards Avenue. This evaluation was based upon current counts and traffic projections during the p.m. peak hour for both a non-event Sunday and a football game Sunday. Volume/capacity

TABLE 9: FREEWAY RAMP OPERATIONS - OUTBOUND SUNDAY FOOTBALL FLOWS

<u>Ramp Location</u>	<u>P.M. Peak without Football Volume / Capacity/a/</u>	<u>P.M. Peak with Football Volume / Capacity/a/</u>
I-880 at High Street		
northbound on-ramp	0.53	1.02
southbound on-ramp	0.36	0.66
I-880 at 66th Avenue		
northbound on-ramp	0.38	1.01
southbound on-ramp	0.41	1.08
I-880 at Hegenberger Road		
northbound on-ramp	0.75	1.53
southbound on-ramp	0.42	1.33
I-580 at Edwards Avenue		
northbound on-ramp	0.30	0.61

/a/ Capacity estimated as 1500 vehicles per hour for ramps.

SOURCE: Kolve Engineering, Inc.

(v/c) ratios were computed at the freeway on-ramps at each interchange to indicate the relative level of use at each location. Figure 14 shows the traffic volumes for both the on-ramps and key roadway segments.

Under current conditions, the on-ramps operate at v/c ratios ranging from 0.30 to 0.75. The heaviest traffic levels occur at the on-ramp from Hegenberger Road to Interstate 880. The v/c ratio of 0.75 indicates that this ramp is heavily used during the p.m. peak hour on a non-event Sunday and experiences moderate levels of congestion. The remaining on-ramps have v/c ratios of 0.53 or less, which indicate an overall light demand for on-ramp facilities in this area on a Sunday afternoon.

The assessment of the freeway on-ramps after a Sunday football game indicates that the volumes exceed capacity at several locations. These locations include both on-ramps at the 66th Avenue and Hegenberger Road interchange, as well as the northbound on-ramp at High Street. The heaviest congestion occurs at the Hegenberger Road



FIGURE 14
COMPARISON OF SUNDAY PM PEAK VOLUMES -
EXISTING VS. EXISTING WITH FOOTBALL

interchange, where the v/c ratio of the northbound on-ramp is 1.53 and the southbound on-ramp is 1.33. A v/c ratios in excess of 1.0, indicates that queues extend from the on-ramps back towards the parking lot areas immediately following the game. These queues were observed to dissipate approximately 45 minutes after completion of the football game.

Freeway Conditions

The Coliseum has direct freeway access from the Nimitz Freeway (I-880), connecting the Stadium with points south (especially southern Alameda and Santa Clara Counties) and north (San Francisco, northern Alameda County and central / west Contra Costa County). I-580 would also be used by a small proportion of fans, especially from the Berkeley / Oakland Hills, Hayward, and the Central Contra Costa County.

I-880 is the principal freeway along the urbanized western portion of the East Bay. Unlike I-580, through truck traffic is allowed on I-880 near the Coliseum. I-880 carries four through lanes in each direction in the study area, narrowing to three lanes in each direction south of SR 238 in Hayward.

Recent p.m. peak hour counts (4:30-5:30 p.m.) at the 66th Avenue interchange indicated that 5,984 vehicles were traveling southbound and 5,540 vehicles were traveling northbound on the freeway. These volumes indicate that the southbound lanes were functioning at LOS D (unstable flow, speeds typically somewhat under the speed limit), while the northbound lanes were functioning at LOS C (fairly stable flow, with speeds at or near the speed limit). Caltrans estimates that peak hour volumes at this location are approximately 20,600; this would mean traffic is operating above capacity in both directions./2/ Visual observations suggest that LOS C/D is an accurate depiction. South of the Coliseum (between Davis Street and Route 238), I-880 is near capacity and, according to Caltrans, "among the worst in the Bay Area."/3/

Based on standard factors derived from Caltrans and national data, average weekday volumes (both directions) on I-880 are estimated at 128,000 vehicles and average Sunday volumes are estimated at 91,000 vehicles. Hourly volumes for Sunday between noon and 1 p.m. and 4-5 p.m. are estimated at 8,200 vehicles. No recent daily volumes or Sunday traffic counts are available from Caltrans for I-880 in the project vicinity.

With the existing Stadium configuration, a weekday evening football game plus a typical Arena event results in capacity conditions during the p.m. peak hour in the southbound direction on I-880 approaching the Coliseum, with "stop and go" traffic. In the northbound direction, a weekday evening football game plus an Arena event results in near-capacity conditions (LOS E), with greatly reduced speeds.

I-580 provides alternative freeway access, particularly for residents of the Oakland / Berkeley Hills and Central Contra Costa County. According to Caltrans, I-580 carries 181,000 daily vehicles and 17,100 peak hour vehicles north of the Edwards interchange./4/ These traffic volumes indicate that I-580 is essentially at capacity in the peak direction (northbound) during the p.m. peak hour.

Transit Service

The Coliseum Complex is served by the Coliseum / Oakland Airport BART station (immediately adjacent) and four AC Transit bus routes (including one route that only operates during weekday peak periods). In addition, for sell-out special events at the Coliseum Stadium, AC Transit currently provides a shuttle bus from the Coliseum BART station to the Stadium that is operated by the Coliseum. (Coliseum transit service is shown in Figures 15, 16, and 17.)

BART Service

BART (Bay Area Rapid Transit) is the principal public transit provider for Coliseum-bound trips. The 71-mile system links San Francisco, Richmond, and most of the urbanized East Bay communities with the Coliseum. The Coliseum Station is on the Fremont line. During all BART operating hours (generally 6 a.m. to midnight), no transfer is required for Coliseum-bound passengers originating at stations between Lake Merritt (Oakland) and Fremont.

The following describes BART's regular operating schedule, which is typically modified for large Coliseum events or other unusual demands. Regular weekday service on the Richmond-Fremont line operates on 15-minute headways (i.e., every 15 minutes). Daly City / San Francisco-to-Fremont service is provided on 15-minute headways until 6 p.m. weekdays. In the evenings or on Sunday, passengers from San Francisco headed to destinations on the Fremont line usually have to transfer

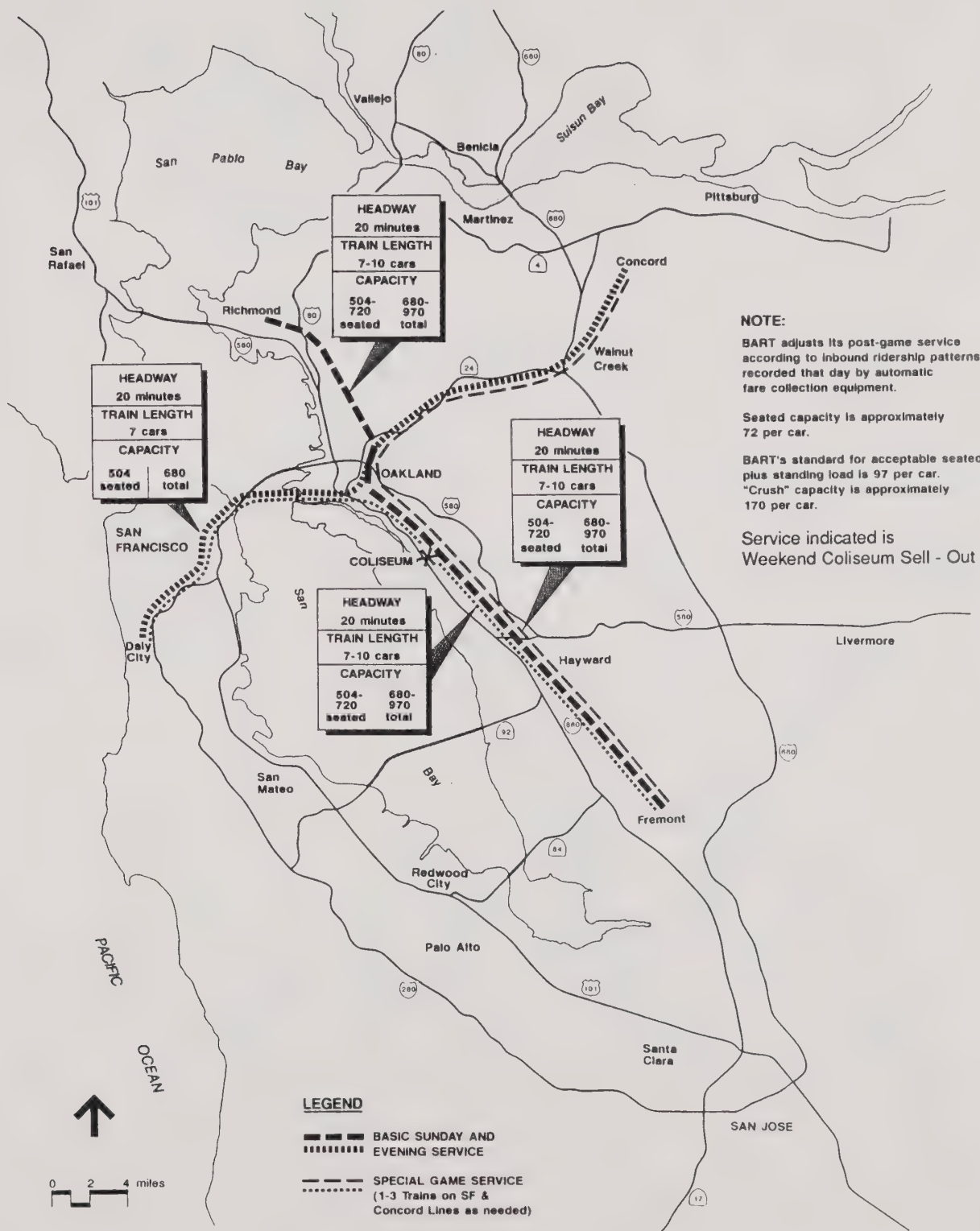


FIGURE 15
EXISTING BART POST - GAME SERVICE

Source: BART Train Scheduling
and Korve Engineering, Inc.

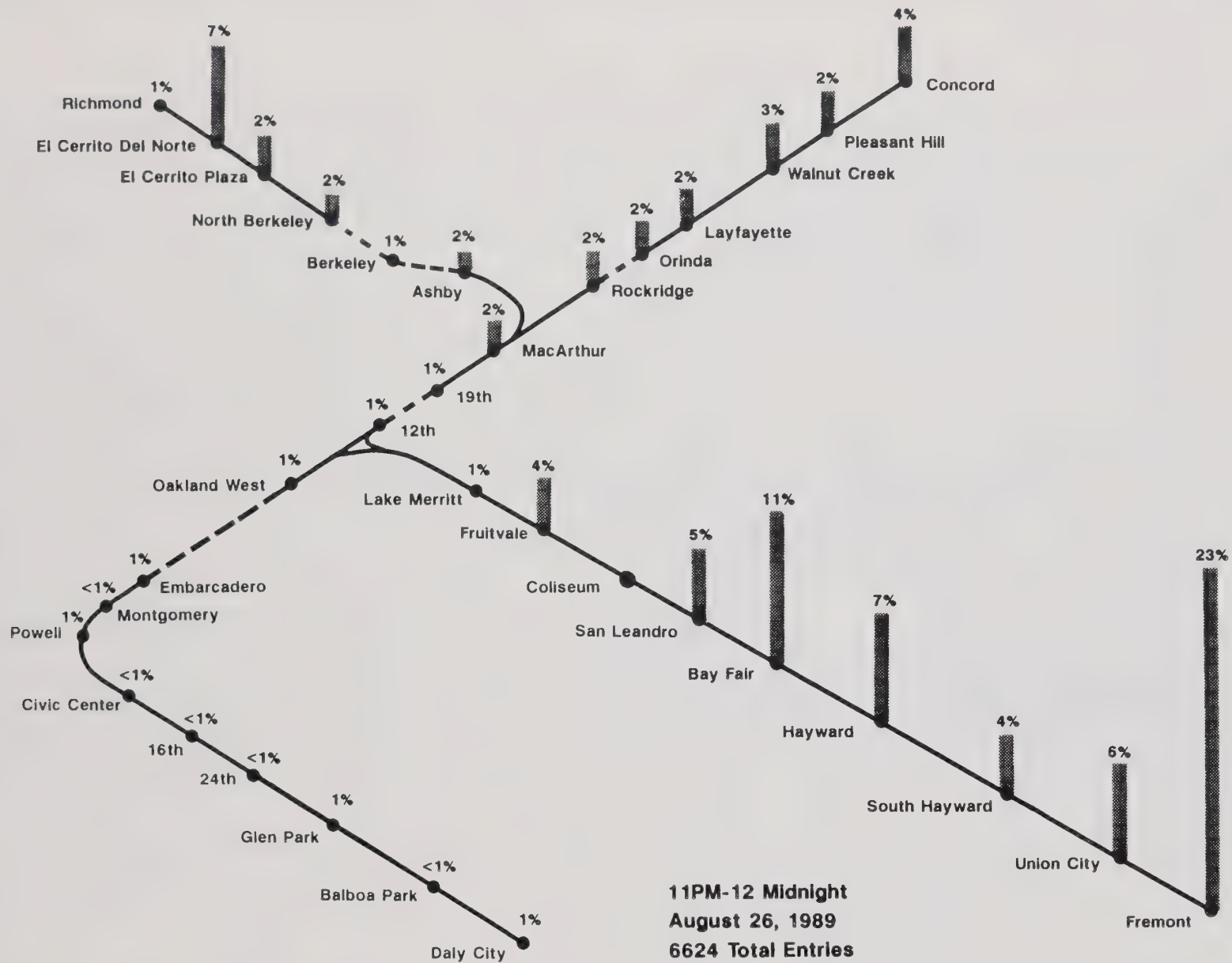


FIGURE 16
BART STATION DESTINATION COUNTS
FOR POST - EVENT TRIPS FROM COLISEUM



FIGURE 17
EXISTING AC TRANSIT BUS SERVICE
TYPICAL SUNDAY SELL - OUT

in downtown Oakland. During the morning and evening peak commute hours, transbay service is supplemented by added trains principally running on the Concord-Daly City line. Peak-hour headways do not change significantly on the Fremont line, which serves the Coliseum station. Fremont-Daly City headways drop from 15 minutes during mid-day periods to 11 minutes in the peak hour, while Fremont-Richmond headways remain at 15 minutes during both mid-day and peak periods.

On Saturday, both Richmond-Fremont and Daly City / San Francisco-Fremont lines operate on 20-minute headways. On Sunday, the Richmond-Fremont and Daly City-Concord lines operate on 20-minute headways.

During recent special events, such as the recent Oakland Athletics playoff and World Series games (October, 1989), BART provided direct service from the Coliseum to both Concord and Daly City / San Francisco, in addition to the usual Richmond-Fremont service. Special event trains are typically 7-10 cars long, providing between 500 and 720 seats. The BART standard for acceptable ridership levels at special events is for trains to be filled up to 135% of seated capacity; special event trains can carry from 680 to 970 passengers without significant crowding. (Typical post-game service is illustrated in Figure 15.)

Special event trains are scheduled on an event-by-event basis, and BART provides post-event trains (when demand is most peaked) based on the origins of trips to the Coliseum station in the period just before the game. For sell-out events, trains leave the Coliseum station bound for San Francisco, Richmond, and Concord on about 20-minute headways. Fremont trains operate more frequently, about one every seven minutes. (BART station destination counts are given in Figure 16). Based on this schedule, BART can carry up to 8,700 passengers to San Francisco / Richmond / Concord in the post-event hour and a similar number southbound.

Average Sunday ridership is about 50,600. On a typical Sunday, peak hour ridership throughout the system is about 6,000-7,000 passengers. About 6,600 fans entered the BART Coliseum station in the hour after the Raiders' sell-out exhibition game. Under existing conditions, a Coliseum event exiting during the Sunday BART peak hour is still well within the overall system capacity of about 17,400 patrons passing the Coliseum Station.

While weekday baseball games typically produce smaller BART crowds, they have a greater impact on BART, due to the heavy background ridership of commuters returning home from work. About 13% of fans at a typical weekday evening A's game arrive by BART and up to 50% of these travel to the Coliseum between 5 p.m. and 6 p.m. For a typical baseball game, this equals an additional 1,560 BART passengers in the p.m. peak hour, at a time when seats are typically fully occupied. The baseline load factor at this time for trains southbound leaving Lake Merritt Station, is equal to 119% of seated capacity for the Fremont-Daly City trains and 107% of seated capacity for Richmond-Fremont trains.^{/5/} These loads exceed BART's standard for regular peak hour service to have all seats occupied, but to have no standees.

The impact of Coliseum events on BART operations is most noticeable at the station level. An estimated 10,400 fans arrived by BART at the Coliseum Station during the Raiders pre-season exhibition football game. About 7,500 (or 72%) of these fans left during the peak hour after the game. In Game 3 of the 1988 World Series, BART estimates that it carried a total of 17,626 riders.^{/7/} During the 1989 American League playoffs, an estimated 13,000-15,000 fans arrived by BART.

While the Coliseum BART station is theoretically capable of handling these loads, the peaking characteristics of passenger arrival rates has caused problems. In particular, this station has a single loading platform 24 feet wide between northbound and southbound tracks. The platform is only nine feet wide between stairwells and the edge of the platform.^{/8/} (By comparison, 8-foot sidewalks are considered the minimum in commercial districts or bordering schools.)

Crowds on the platform can restrict movement from stairs and escalators. In response to safety concerns, BART instituted two crowd control measures for 1989 A's playoff and World Series games. First, the pedestrian bridge from the Coliseum Stadium to the BART station was partially gated to meter pedestrian traffic. Second, BART police held crowds in the station concourse area (at the base of stairs and escalators) until the appropriate train approached. BART considered this a successful effort, although it resulted in some delays to BART patrons.^{/9/}

Other potential bottleneck points at the station include faregates and the pedestrian bridge itself. With the existing Stadium seating, although there have been brief periods in which demand exceeded capacity, neither has proved a serious congestion point. BART faregates can handle 25 entrances per minute. With 11 of 12 faregates operating in the dominant direction of travel, the station has an hourly capacity of 16,500 patrons. The pedestrian bridge is 18 feet wide. Subtracting 3 feet for the center post width and shy distance, the pedestrian bridge effectively 15 feet wide. The effective capacity of the pedestrian bridge is 22,500 pedestrians per hour./10/

Coliseum events naturally draw increased BART patronage at other stations. The majority of BART passengers to the game come from the south, particularly from the Fremont station. The Fremont station accounted for 1,552 exits made by passengers who had entered the Coliseum Station in the hour after the Raiders game. These passengers occupied an estimated 520 parking stalls at the Fremont station of the 2,374 spaces provided there.

BART police indicate the parking stalls at BART lots are rarely filled on weekends either by Coliseum patrons or people attending other special events. Many lots are filled during weekdays by daytime commuters, limiting parking availability for Coliseum-bound BART passengers.

AC Transit Service

AC Transit regular bus service provides a public transportation link with East Oakland, the Oakland Airport, Emeryville, and the Oakland Hills via Route Numbers 56, 57, 66, and 98. (Figure 17 indicates the routes of AC Transit service near the Coliseum.) Route 56 runs a loop between the Coliseum and Oak Knoll Hospital on 40-minute headways evenings and Sundays. Route 57 is a major trunkline route, running between the Oakland Airport, East Oakland and North Oakland, principally on MacArthur Blvd. This route runs on 20-minute headways evenings and Sundays. (At one time, this line was diverted to the Coliseum during events, but this practice was ended due to the schedule delays it caused.) Route 66 is the San Leandro / San Lorenzo commuter special that would have very limited use by Coliseum fans. Route 98 provides service on 98th Avenue between the Coliseum and MacArthur Boulevard, running on hourly Sunday / evening headways.

Estimates of typical AC Transit load factors, as determined by AC Transit staff based on ridership counts, are shown in Table 10. These load factors indicate that on Saturdays and Sundays (typically the days for the largest Coliseum crowds), there is extensive excess capacity on AC Transit routes serving the Coliseum. On weekdays, two of these routes are close to capacity for short sections. Nevertheless, Coliseum ridership has a limited impact on weekday or weekend service. AC Transit carries only about 1% of the typical sell-out A's crowd. For example, an estimated 500 persons used AC Transit as the primary mode to reach the Raiders exhibition game.

For sell-out events AC Transit also provide two buses that shuttle from the Coliseum BART Station (San Leandro Street bus loading zone) to Parking Lot B near the Stadium. This is provided by two buses. For the Raiders game, two articulated buses (with 69 seats each) were used. Because it is faster for most able-bodied pedestrians to walk to the Stadium via the pedestrian bridge, this shuttle service has been very lightly patronized, with fewer than 200 passengers for most events. The shuttle is most attractive to elderly, handicapped, and those with limited mobility. AC shuttle buses loop around the Coliseum, then onto the Hegenberger overpass, turning onto Baldwin southbound. They enter the Coliseum via a private road (Baldwin Drive to Catfish Road) passing underneath the Hegenberger overpass to Lot B.

Special Transit Service

For the Raiders exhibition game and for other sell-out sports events, the Coliseum Complex has provided private shuttle bus service from lots west of I-880 along Oakport. For the Raiders game, the Coliseum ran six shuttle buses and carried an estimated 2,000 of 3,000 fans parking along Oakport. The shuttle buses were routed via Hegenberger Road, Baldwin, and Catfish Road to Lot B.

In addition, 40 charter buses carried an estimated 1800 fans to the Coliseum for the Raiders game. Charter buses were parked at the northeast end of Lot B. The Air-BART shuttle offers van service between the Coliseum BART station and Oakland Airport. However, since this shuttle does not make intermediate stops, it has very limited value for Coliseum patrons.

TABLE 10: AC TRANSIT SUNDAY BUS LOAD FACTORS - REGULAR SERVICE TO COLISEUM BART STATION (1988)

<u>Route No.</u>	<u>SUNDAY Est. Avg. Maximum Load Factor (%)</u>	<u>Pass. / Hour</u>	<u>SATURDAY Est. Avg. Maximum Load Factor (%)</u>	<u>WEEKDAY Est. Avg. Maximum Load Factor (%)</u>
56	35	12.0	65	95
57	50	32.5	60	80
98	35	15.7	35	65

SOURCE: AC Transit Research & Planning, October 1989; AC Transit 5 Year Plan: Fiscal Year 1988-1992.

Pedestrians

There are no special pedestrian facilities serving the Coliseum, except the pedestrian bridge from BART described under the earlier "Mass Transit" section. Fans walking from vehicles parked off-site typically enter the Coliseum Complex via the BART pedestrian bridge, the 66th Avenue / Coliseum Way north gate, or to a lesser extent, at the Coliseum Way south gate near Hegenberger Road and the Pacific Bell gate on Hegenberger near Baldwin. Those fans actually walking all the way from homes to the Coliseum would generally come from the east and walk through the BART station and over the pedestrian bridge.

For the Raiders exhibition game, the heaviest off-site flow was on the BART pedestrian bridge where an estimated 10,500 pedestrians per hour exited the game (see Figure 18). This estimate includes approximately 7,500 persons destined for BART, 500 persons destined for AC Transit, and 2,500 persons destined for private automobiles parked in the BART lot and on surrounding streets. The 66th Avenue overpass over the Nimitz Freeway also had a significant flow with 4,100 pedestrians recorded walking westbound on the south side following the game (10-11 p.m.). This overpass is close to the auxiliary dirt parking lot and also has a continuous sidewalk on the south side. By contrast, pedestrian movements on the Hegenberger overpass were much lighter, with 650 pedestrians counted in the hour after the Raiders game (10-11 p.m.). This overpass is less convenient to the overflow parking lot and requires a longer walk distance to the Coliseum. Also, the sidewalk is not continuous on the north side, where most pedestrians would prefer to walk.

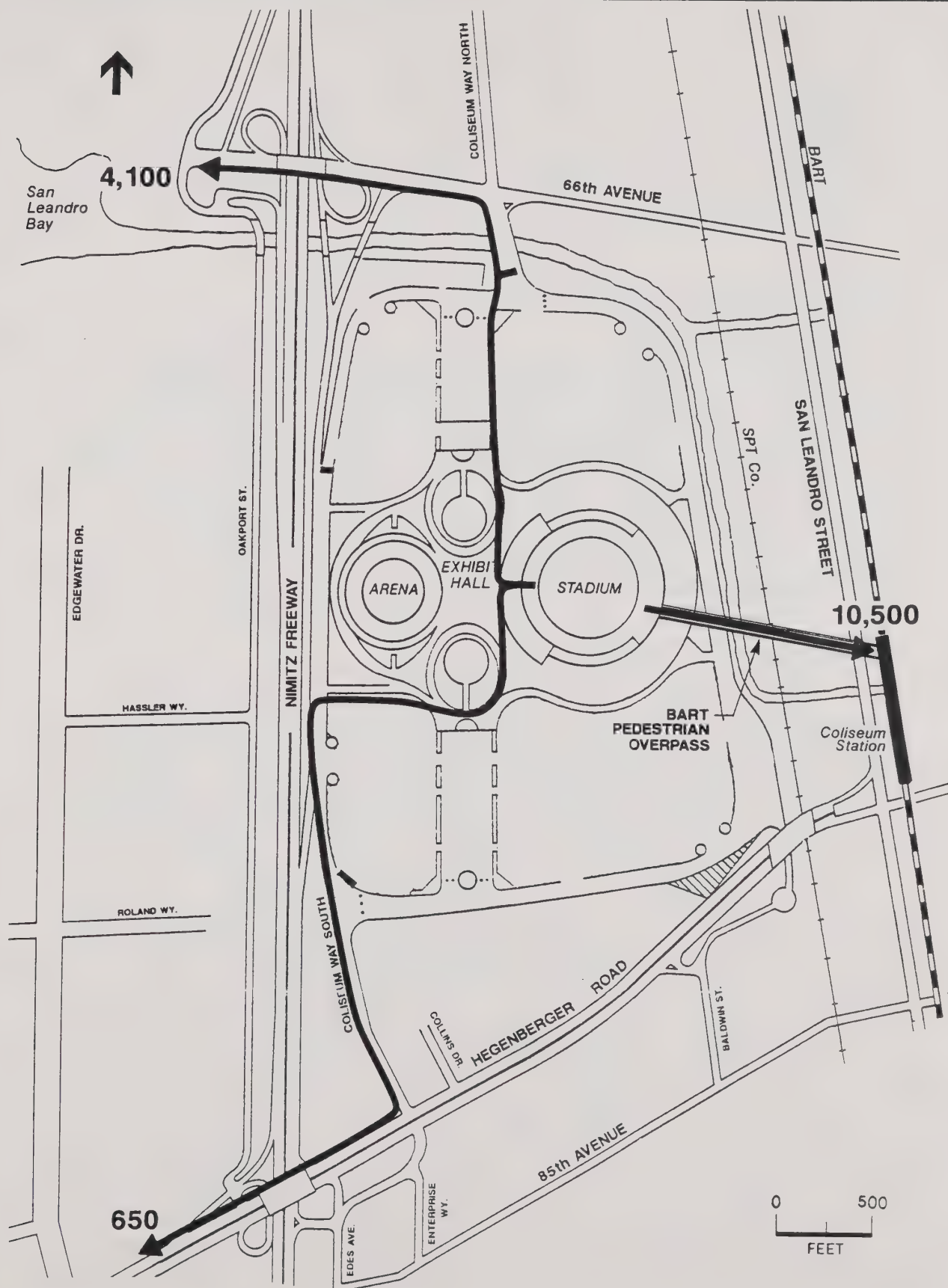


FIGURE 18
MAJOR PEDESTRIAN FLOWS TO OFF-SITE LOCATIONS
SUNDAY FOOTBALL, PEAK - HOUR EXITS

Both the pedestrian bridge and the 66th Avenue overpass operated at an average of LOS D for the hour following the Raiders game, with brief periods at capacity. LOS D for walkways indicates that walking speed and movements are restricted, with considerable friction between pedestrians./11/ Hegenberger overpass pedestrian traffic was generally free-flowing.

Programmed Roadway and Transit Improvements

The construction of a variety of local and regional roadway improvements are programmed over the longer term. Some of these improvements are identified in the public improvements list included in the Nimitz-Doolittle (NIMDOTS) Central Area Report, while others are included in the State Transportation Improvement Plan (STIP) or in the spending program of the Alameda County Traffic Authority (Measure B). For discussion purposes, the projects are separated into short-term (completion within five years) and long-term improvements.

Short-Term Projects

Hegenberger Road. The NIMDOTS report proposed that Hegenberger Road be restriped to eight lanes between Doolittle Drive and I-880 as a temporary capacity enhancement. This project is on hold pending further traffic analysis for the Cross-Airport Roadway project, which will recommend permanent improvements.

AC Transit. AC Transit is planning a major overhaul of its bus route network under the proposed Comprehensive Service Plan. Changes are generally scheduled to go into effect in September 1991. A key objective of the program is to increase cross-town service to handle trips destined to major employment and activity centers outside the traditional downtowns. The program orients service toward transit centers, where transfers would be made more convenient either by frequent service or by pulsed scheduling, in which most buses would arrive at the same time. The Coliseum BART station would receive a significant increase in service, with seven routes planned to serve it./12/ (See Figure 19 for an illustration of planned bus routes.) The primary effect of these changes would be to provide greater bus connections to East Oakland and the Oakland Hills, but to eliminate the direct bus service to North Oakland provided by the No. 57 line (which is duplicated by BART today).



FIGURE 19
PLANNED AC TRANSIT
SERVICE CHANGES

Cumulative growth projects near the Coliseum are not expected to affect transit service or crowding appreciably during game periods. These projects (RV park, value-oriented retail development, and retail center focusing on home furnishings) will attract virtually no patrons who would use transit. Employee transit use would be small and would tend to concentrate in time periods and directions that would not coincide with Coliseum patrons' travel patterns.

Long-Term Projects

Edgewater Drive / 66th Avenue Connection. Edgewater Drive is proposed to be extended across the Damon Slough to connect with 66th Avenue at Oakport Street. The Port of Oakland is in the process of obtaining environmental clearance for the project.

Nimitz Freeway Widening. The Nimitz Freeway (I-880) is an eight-lane facility near the Coliseum and south to Washington Avenue (near State Route 238), where it transitions to six through lanes. The Caltrans' widening project and a related Measure B project would make I-880 a continuous eight-lane facility from Union City north through Oakland. The additional lanes would be restriped for carpool use during weekday peak periods from Hayward through Union City. In addition, auxiliary lanes would be added between selected interchanges to make I-880 ten lanes wide for several sections south of Davis Street (Davis Street is two interchanges south of Hegenberger Road). Work on this project is underway and scheduled to be completed in 1990 for the section near the Coliseum.

Reconstruction of Hegenberger Road Interchange. This Measure B project is designed to increase capacity and eliminate conflicts on the road serving the ramp system. The project would eliminate the southbound off-ramp to eastbound Hegenberger Road and connect the other southbound off-ramp to a new signalized intersection with Hegenberger Road. Thereafter, southbound exiting vehicles would be able to turn right or left onto Hegenberger from this new diagonal ramp. In conjunction with this improvement, Oakport Street may be realigned to intersect with Edgewater near Hegenberger, rather than merging with the existing southbound off-ramp. The existing northbound loop on-ramp may be replaced with a diamond on-ramp connecting to another signalized intersection on Hegenberger Road. Under this option, a northbound loop off-ramp to Hegenberger Road would also be added, while the existing

northbound on- and off-ramps to Edes Avenue would be retained. This project is in the preliminary engineering phase. The project is scheduled to be completed by late 1994 or early 1995.

Cross-Airport Roadway. The Port of Oakland, the City of Oakland, and the City of Alameda are jointly conducting a preliminary engineering study for the construction of a four lane facility from Harbor Bay Parkway to I-880. The new four-lane roadway would extend from Harbor Bay Parkway to the complex of 98th Avenue / Hegenberger Road / Airport Drive. This roadway would pass under the Oakland International Airport taxiway. In addition, 98th Avenue and Hegenberger Road are likely to be widened between the San Leandro Creek and the Airport. Hegenberger Road would likely be restriped to eight lanes and 98th Avenue to five or six lanes. This project is tentatively scheduled for construction to be completed by 1992.

BART. BART is expanding capacity and extending rail lines further out from the urbanized core of the Bay Area. BART has planned a three-phase program of extensions (see Figure 20). This program includes four Phase One extensions now undergoing preliminary engineering and environmental studies: Castro Valley / West Dublin, Warm Springs (Fremont), North Concord / West Pittsburg, and Colma / San Francisco International Airport. These extensions are expected to be completed by 1997, with the exception of the San Francisco International Airport, which is scheduled for completion by Year 2000. A Phase I Milpitas extension is in early planning stages. Phase II includes extensions that are likely to be completed after Year 2000, as funding becomes available: West Contra Costa County, San Jose, Menlo Park, East Livermore, and Northwest San Francisco. Phase III projects would complete the ring around the Bay; no funding source has been identified for these improvements.

BART's capacity expansion program includes several steps designed to decrease scheduled train headways and increase the number of trains and cars operating in peak periods. Today, the minimum headway through the Bay tube is three minutes and 30 seconds. As the capacity expansion program is completed, this minimum should be cut to two minutes and 30 seconds. With additional vehicle purchases and a new computerized train control system, the number of trains operating during the peak hour is planned to increase from 45 to 75.

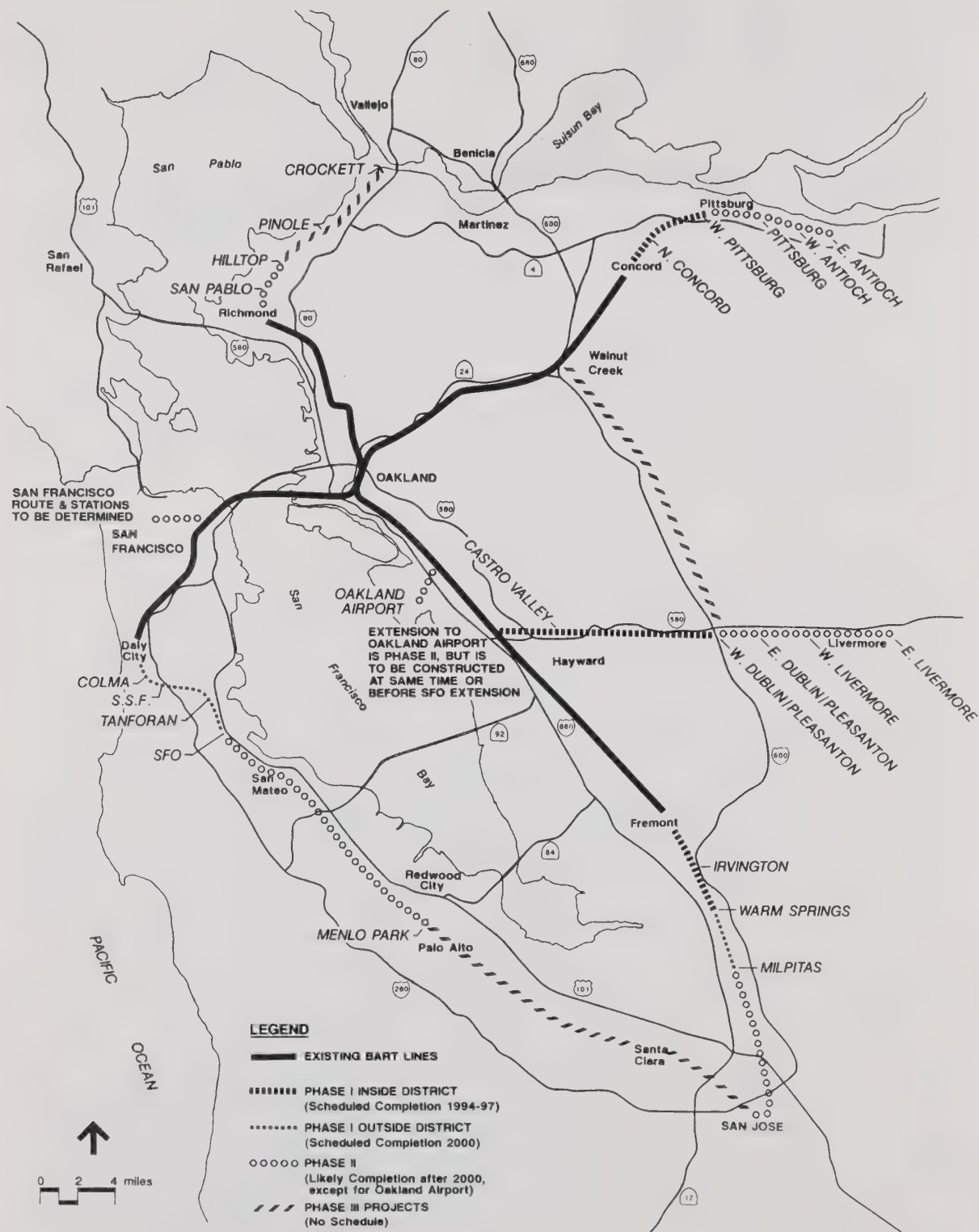


FIGURE 20
PLANNED BART EXTENSIONS

Source: BART, Service improvements and Extensions, May 1989.
and Korve Engineering, Inc.

BART is also planning for an Oakland Airport rail connection. This connection would likely be an automated guideway (AGT), or "people mover," system. Although it is officially a Phase II project, the Oakland Airport rail connection is scheduled to be completed before or at the same time as the San Francisco International Airport extension. This project was assessed in a 1981 Environmental Impact Statement that compared two AGT alternatives./13/ One alternative included stations at BART, the Oakland Airport, and intermediate stops at Hegenberger Road / Pardee Drive and Edgewater Drive / Elmhurst Channel. The other AGT alternative had no intermediate stations. No stations were included at the Coliseum Complex itself in any alternative, although the elevated tracks would run along the southern border of the Coliseum parking lots (along the Elmhurst Channel). The Coliseum Stadium is within a quarter-mile of the BART station, considered generally acceptable distance for walking to a transit stop.

IMPACTS

This section describes the impacts of future traffic generated by both cumulative development and the Coliseum Stadium expansion on the existing transportation system adjacent to the Oakland / Alameda County Coliseum Complex. The three scenarios that are addressed are described as follows:

- Existing plus cumulative
- Existing plus cumulative plus existing events
- Existing plus cumulative plus existing events plus project (Stadium expansion)

Cumulative Impacts

Cumulative Project Locations

Four development projects have been approved or under consideration in the study area that would potentially affect the fourteen study area intersections: the proposed new Arena at the Coliseum Complex, and the approved value-oriented retail development along Oakport Street, Hegenberger Retail Shopping Center at the intersection of Hegenberger Road and Baldwin Street, and the Cruise America R.V. Rental Center along 66th Avenue. The value-oriented retail development along Oakport would include several retail stores that specialize in selling various retail items in mass quantity (e.g., Costco, Pak'N Save, Home Club, Price Club). The locations of these projects are shown in Figure 21.



FIGURE 21
LOCATION OF CUMULATIVE PROJECTS

In addition to those cumulative projects in the Coliseum vicinity, the impact analysis includes one scenario which assumes development of a new, 20,000-seat Arena, to replace the existing 15,000-seat Arena (see Section III.E, Cumulative Development, p. 22). Scenario 6 is attendance at a night baseball game in April that could occur simultaneously with a 20,000-seat sell-out basketball game at a new Arena.

Cumulative Trip Generation

The traffic generation rates for the new developments are based upon accepted standard rates/¹⁴ and travel data presented in prior studies of the cumulative projects (see Table 11). Trip generation by the new Arena is discussed as part of Scenario 6, a night baseball game plus a concurrent basketball game. The projected travel characteristics of the value-oriented retail development were assessed in a traffic impact study for the Oakland Airport Business Park retail uses.¹⁵ The center would generate approximately 1,380 trips during the Sunday noon peak hour, 1,220 trips during the Sunday p.m. peak hour, and 1,220 trips during a typical weekday peak hour.

The Hegenberger Road shopping center would generate 650 Sunday noon peak trips, 540 Sunday p.m. peak trips, and 480 weekday peak hour trips. The greatest number of peak hour trips would be generated by fast food uses at the site. The Cruise America R.V. Park on 66th Avenue would generate 35 peak hour trips during the Sunday noon and weekday p.m. periods. The facility would not generate any trips during the Sunday p.m. peak hour, because the Cruise America facilities are closed during this time period.

Cumulative Trip Distribution

The trip distribution for cumulative projects, other than the new Arena, is based on data prepared for a traffic impact study of the Oakland Airport Business Park. New Arena trips are assumed to have the same distribution as the existing Arena. The trip distribution below was adopted for the cumulative projects, because it was developed for retail uses in the Coliseum Complex area:

North on Interstate 880:	55%
South on Interstate 880:	20%
West on Hegenberger Rd.:	10%
East on Hegenberger Rd.:	5%
East on 66th Avenue:	10%

TABLE 11: CUMULATIVE TRIP GENERATION

<u>Development Name / Location Size</u>		Coliseum Event Scenarios					
		<u>Sunday Noon</u>		<u>Sunday P.M.</u>		<u>Weekday P.M.</u>	
		<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>
Value-oriented retail center	220,000 s.f.	690	690	610	610	610	610
Hegenberger retail center							
• shopping center	37,724 s.f.	135	135	130	130	100	100
• fast food	5,031 s.f.	190	190	140	140	140	140
Cruise America R. V. Park	4.5 acres	<u>20</u>	<u>15</u>	<u>0</u>	<u>0</u>	<u>20</u>	<u>15</u>
	TOTAL	1,035	1,030	880	880	870	865

SOURCE: Kolve Engineering, Inc.

Cumulative Service Levels

The traffic generated by the cumulative development was added to existing volumes on the roadway system in the study area. The projected volumes are evaluated to establish projected service levels at each intersection for the "existing plus cumulative" scenario. The service level analysis was conducted for the Sunday noon peak hour, the Sunday p.m. peak hour, and the weekday p.m. peak hour. The peak hour service levels for the cumulative scenarios are shown in Tables 15 through 20 in the Project Impacts Section, below.

The addition of cumulative traffic would result in LOS C conditions or better at all intersections for both the Sunday noon and Sunday p.m. peak hours. During the Sunday noon period, the intersection of 73rd / MacArthur would operate at LOS C, which indicates acceptable delays would be present. The intersection of High / Coliseum would operate at LOS C during the Sunday p.m. peak period.

Two intersections would operate at LOS F during the weekday p.m. peak hour, when cumulative traffic is added to the existing conditions. The intersections of Hegenberger / Edgewater and High / Coliseum, both operate at LOS F under existing conditions. The intersection of 66th Avenue / San Leandro and High / Oakport would operate at LOS D, which indicates moderate queueing and tolerable delays. The remaining intersections would operate at service Level C or better during the weekday p.m. peak hour.

Harbor Bay / Doolittle Drive

The Harbor Bay / Doolittle Drive intersection is adjacent to the northwest corner of the practice fields site. This intersection is located in the City of Alameda some distance from the Coliseum site. As a result, the assessment of cumulative impacts is based on environmental studies conducted for the City of Alameda on the Harbor Bay Isle project.^{16/} The prior study indicates that this intersection would operate at LOS C ($v/c = 0.74$) with both proposed development and local roadway improvements.

Cumulative Plus Existing Coliseum Event Impacts

This section establishes the baseline against which the project's traffic impacts are measured by developing future service levels for all study intersections. The future baseline scenario includes the addition of traffic from both cumulative development and the six existing Coliseum event scenarios, as analyzed in the previous section (Setting). Tables 15 through 20 in the Project Impacts section show the future base service levels for all six project scenarios.

Scenario 1, which identifies the impact of cumulative and Sunday football traffic, would experience LOS E conditions at three locations: the intersections of Hegenberger / Coliseum, 73rd / MacArthur, and 66th Avenue / Coliseum. The intersection of High / Oakport operates at LOS D/E during the Sunday noon peak hour. The intersection of 66th / San Leandro would operate at LOS D.

Scenario 2 examines cumulative and Sunday football game traffic during the p.m. peak hour. Four of the study intersections would operate at LOS F during the peak hour following the end of the football game: Hegenberger / Coliseum, 66th / Coliseum, 66th / San Leandro, and High / Coliseum.

In Scenario 3, the addition of cumulative and Monday night football traffic to roadway the network would result in LOS F conditions at six locations and LOS E conditions at one location during the p.m. peak hour. LOS F conditions would result at the intersections of Hegenberger / Edgewater, Hegenberger / Coliseum, 66th / Coliseum, 66th / San Leandro, High / Coliseum, and High / Oakport. The intersection of Edes / northbound Interstate 880 off-ramp would operate at LOS E, creating significant delays for motorists. It should be noted that Monday night football "home games" are rare and occur an average of about once every two years.

Scenario 4, which adds cumulative and day baseball traffic to the network during a weekday p.m. peak hour, would result in LOS F conditions at two intersections, the Hegenberger / Edgewater and High / Coliseum intersections both of which operate at LOS F under existing conditions.

Scenario 5, which assesses cumulative and night baseball conditions, results in LOS F conditions at four intersections and LOS E conditions at one intersection. The intersections of Hegenberger / Edgewater, 66th / San Leandro, High / Coliseum, and High / Oakport would operate at LOS F because of moderate game-related traffic and heavy background traffic on High Street destined for Alameda. The intersection of Hegenberger / Coliseum would operate at LOS E conditions.

Scenario 6 assesses cumulative conditions with an average weekday night baseball game in the Stadium and a concurrent sell-out weekday night basketball game in the expanded Arena. This scenario would result in LOS F conditions at four intersections and LOS E conditions at one intersection. The intersections of Hegenberger / Edgewater 66th / San Leandro, High / Coliseum, and High / Oakport would operate at LOS F because of game-related traffic and heavy background traffic on High Street destined for Alameda. The intersection of Hegenberger / Coliseum would operate at LOS E conditions.

Project Impacts

The expansion of the Coliseum Stadium would add 11,000 seats for football events and 7,000 seats for baseball events. This expansion would be accomplished by lowering the field to add first deck seating, expanding the upper two levels over the bleacher

sections, and revising the bleacher seating to include a retractable section for football events. The project also includes the re-establishment of a practice complex at the intersection of Harbor Bay / Doolittle in the City of Alameda. The following section provides an assessment of the impacts of the added seating and the practice field on traffic, transit, and pedestrian conditions.

Project Trip Generation

The number of peak hour trips generated by the project is based on several factors including the increased level of attendance, the modal split, and the parking distribution. The peak hour trip levels projected for inbound and outbound traffic generated by the project is based on the number of added patrons. These levels do not include trips generated by Coliseum employees or players, because they arrive and exit the Stadium area outside of the peak traffic period. In addition, the employees and players park in separately designated lots. The assumptions regarding increased attendance for each project scenario are shown in Table 12. For football games, it was assumed that 91% of the added seats would be filled on a typical game day. This assumption would result in an average overall attendance of 92% for football games.

The attendance for weekday baseball games at the Coliseum Complex is much lower than the Stadium capacity. The baseball day and night games that were surveyed had attendance levels of 22,000 and 24,000, respectively. Based on recent trends, an increase in patronage is expected for baseball games by the Year 1992. A proportion of the increase in patrons would be caused by the addition of premium lower deck seats and sky boxes. As a result, an additional 3,000 to 3,500 persons are projected to attend weekday baseball games upon completion of the project.

The modal split for existing football and baseball events, shown in Table 2, is applied to the increased attendance levels shown above to determine the vehicle trip generation for the project. The peak hour trip generation for each scenario is shown in Table 13.

The practice complex at the intersection of Harbor Bay / Doolittle Drive would generate approximately 400 daily vehicle trips and 60 vehicle trips during the p.m. peak hour on a typical weekday. These trips include 7 inbound and 53 outbound trips

TABLE 12: PROJECTED ATTENDANCE LEVELS - PROJECT SCENARIOS

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Element	Football Sunday Noon	Football Sunday P.M.	Football Monday P.M.	Baseball Day Weekday P.M.	Baseball Night Weekday P.M.	Baseball & Basketball Night Weekday P.M.
Existing Capacity/a/	53,000	53,000	53,000	50,000	50,000	50,000
Future Capacity/a/	64,000	64,000	64,000	57,000	57,000	57,000
Increasea/a/	+11,000	+11,000	+11,000	+7,000	+7,000	+7,000
Base Attendance/a/	49,000	49,000	49,000/b/	27,300	26,700	17,300/c/
Future Attendance/a/	59,000	59,000	59,000/b/	30,300	30,300	20,800/c/
Increase/a/	+10,000	+10,000	+10,000	+3,000	+3,500	+3,500

/a/ Stadium only. Arena is not part of the project.

/b/ Attendance for Monday night football was assumed to be the same as for weekend football games.

/c/ Baseball attendance only. Although this scenario includes concurrent baseball and basketball games, Arena attendance is not part of project effects.

SOURCE: Korve Engineering, Inc.

during the p.m. peak. The daily trip generation estimates assume a total of 108 persons at the site/17/ and are based upon the following population distribution:

Football Team & Staff

- 60 - Players
- 12 - Coaches
- 30 - Staff and Support Personnel

Other Persons

- 6 - Press Representatives

The peak hour trip generation rate is based upon surveys of the San Francisco 49er practice facility in October, 1989.

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TABLE 13: PROJECT TRIP GENERATION LEVELS - PROJECT SCENARIOS

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Element	Football Sunday Noon	Football Sunday P.M.	Football Monday P.M.	Baseball Day Weekday P.M.	Baseball Night Weekday P.M.	Baseball & Basketball Night Weekday P.M.
Daily Auto Trips/a/	5,400	5,400	5,400	1,680	1,900	1,900
Street Peak Hour	12-1 p.m.	4-5 p.m.	4-5 p.m.	4-5 p.m.	4-5 p.m.	4-5 p.m.
Peak Hour Auto Trips	950	1,890	1,080	80	290	290
Percent of Daily Trips	17.5%	35%	20%	5%	15%	15%

/a/ Auto trips to and from the Coliseum Complex attributable to Stadium expansion only.

SOURCE: Korve Engineering

The proposed Hall of Fame facility, which would be located within the Coliseum Complex facility, is not projected to generate any additional vehicle trips during the peak hours immediately preceding and following the football game scenarios. A substantial level of visitors to this facility are expected on days when football games occur. This patronage is attributed to secondary trips made by patrons whose primary trip purpose was the football game. During evening baseball and basketball games, the Hall of Fame facility would likely not be open. No additional peak hour trips would be generated for these scenarios.

Project Trip Distribution

The assignment of project traffic uses the trip distribution data from existing events that was discussed previously in Table 5 and shown in Figure 10. This study assigned 42% of the traffic onto northbound Interstate 880, 31% onto southbound Interstate 880, 5% onto northbound Interstate 580, and 22% onto local streets.

The distribution for the proposed practice facility is based upon information presented in Harbor Bay Isle environmental studies. These studies assigned 54% to the north on Doolittle Drive, 36% to the south on Doolittle Drive, and 10% to the west on Harbor Bay Isle during the p.m. peak hour.

Project Traffic Volumes

The addition of project traffic to the "cumulative and existing Coliseum event" scenario yields a traffic assignment for each of the six project scenarios. The greatest one-hour increment of project traffic occurs in Scenario 2, which represents the exiting traffic from a Sunday football game in the p.m. peak hour. The assignment of project traffic for this scenario is shown in Figure 22.

The project would add approximately 1,900 vehicle trips during the hour immediately following a Sunday football game. About 800 trips would be added on northbound Interstate 880, 590 trips on southbound Interstate 880, and 100 trips on northbound Interstate 580. The project would also add approximately 420 vehicle trips onto local streets during the Sunday p.m. peak hour.

A comparison of projected p.m. peak hour volumes for future base (existing traffic cumulative plus existing Sunday football traffic plus cumulative traffic) to future base with project is shown in Figure 23. This figure indicates the relative increases in traffic on key routes adjacent to the Coliseum Complex that would result from the project. A summary of the relative traffic increases due to the project is shown in Table 14.

Project Service Levels

The addition of project-related traffic to the future baseline scenario, which includes existing Coliseum events as well as cumulative development, yields the estimated future volumes for each study intersection. These traffic projections are analyzed to provide LOSs for the future base plus project condition for each of the six project scenarios. A comparison of the LOS of study intersections is provided for each of the six project scenarios in Tables 15 through 20. The following text provides a discussion of the relative project impacts for each scenario.





FIGURE 23
COMPARISON OF SUNDAY PM PEAK VOLUMES
FUTURE BASE VS. FUTURE BASE + PROJECT

TABLE 14: PROJECT-RELATED TRAFFIC INCREASES ON KEY ROUTES

Sunday Football Scenario - P.M. Peak Hour

<u>Location</u>	<u>Future Base Volume/a/</u>	<u>Future Base Plus Project Volume/a/</u>	<u>Increase (Percent)</u>
Hegenberger east / Coliseum	2,000	2,240	12%
Hegenberger east / E. 14th	1,550	1,650	6%
66th Avenue east / San Leandro	860	900	5%
Coliseum Way north / 66th Avenue	940	1,060	13%
Coliseum Way south / Hegenberger	230	250	9%
I-880 NB on-ramp at 66th Avenue	3,680	4,070	11%
I-880 SB on-ramp at 66th Avenue	2,220	2,430	5%
I-880 NB on-ramp at Hegenberger	2,410	2,660	10%
I-880 SB on-ramp at Hegenberger	1,850	2,130	15%

/a/ Future base is existing plus event plus cumulative.

SOURCE: Kolve Engineering, Inc.

Scenario 1. The addition of project traffic would result in significant changes in LOS from the future base condition (existing plus cumulative plus events at existing Coliseum facility) at four intersections (see Table 15). The intersections of Hegenberger / Coliseum and 66th Avenue / Coliseum would both change from LOS E to LOS F. (Note: These locations are both controlled by police officers before a major event.)

The intersection of 66th / San Leandro would degrade from LOS D to LOS E, while the High / Oakport intersection would degrade from LOS D/E to LOS E. The intersection of 73rd / MacArthur, which operates at LOS E under future baseline conditions, would continue to function at LOS E. The remaining locations would operate at LOS D or better.

Scenario 2. The Sunday p.m. peak period would experience a significant change in LOS at one intersection as a result of the project (see Table 16). Peak hour congestion at the intersection of Hegenberger / Baldwin would degrade from LOS C to LOS F during the hour after the event.

TABLE 15: COMPARISON OF SERVICE LEVELS

Scenario 1: Football Event - Sunday Noon Period					
<u>Intersection</u>	<u>Existing</u>	<u>Existing & Event</u>	<u>Existing & Cumulative</u>	<u>Future Base /a/</u>	<u>Future Base /a/ & Project</u>
Hegenberger/Edgewater	A (0.33)	A (0.35)	A (0.38)	A (0.40)	A (0.43)
Hegenberger/Coliseum	A (0.33)	C (0.79)	A (0.44)	E (0.98)	F (1.07)
Hegenberger/Baldwin	A (0.26)	A (0.36)	A (0.43)	A (0.56)	A (0.57)
Hegenberger/E. 14th	A (0.38)	A (0.50)	A (0.42)	A (0.52)	A (0.55)
San Leandro/75th Avenue	A (0.21)	A (0.37)	A (0.21)	A (0.37)	B (0.45)
San Leandro/73rd Avenue	A (0.15)	A (0.23)	A (0.15)	A (0.23)	A (0.26)
73rd Avenue/MacArthur	B (0.68)	D (0.86)	C (0.73)	E (0.91)	E (0.94)
66th Avenue/Coliseum	A (0.26)	C (0.75)	A (0.36)	E (0.96)	F (1.05)
66th Avenue/San Leandro	A (0.45)	C (0.74)	A (0.53)	D (0.83)	E (0.95)
66th Avenue/E. 14th	A (0.49)	A (0.54)	A/B (0.60)	B (0.65)	B (0.67)
High/Coliseum	B/C (0.70)	C (0.79)	B/C (0.70)	C (0.79)	C/D (0.80)
High/Oakport	A (0.64)	D (0.90)	B (0.64)	D/E (0.90)	E (0.97)
66th Avenue/SB 880 ramp	A (0.13)	A (0.41)	A (0.42)	B (0.68)	C (0.72)
Edes Avenue/NB 880 ramp	A (0.24)	A (0.56)	A (0.32)	B (0.64)	B/C (0.70)

/a/ Future base is existing plus event plus cumulative.

SOURCE: Korve Engineering, Inc.

Four intersections would continue to operate at LOS F as projected under the future base condition: Hegenberger / Coliseum, 66th Avenue / Coliseum, 66th Avenue / San Leandro, and High / Coliseum. At these locations, the average delays that motorists experience are projected to increase as a result of project traffic. The remaining locations would operate at LOS D or better.

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TABLE 16: COMPARISON OF SERVICE LEVELS

Scenario 2: Football Event - Sunday P.M. Period

<u>Intersection</u>	<u>Existing</u>	<u>Existing & Event</u>	<u>Existing & Cumulative</u>	<u>Future Base /a/</u>	<u>Future Base /a/ & Project</u>
Hegenberger/Edgewater	A (0.38)	A (0.48)	A (0.42)	A (0.49)	A (0.53)
Hegenberger/Coliseum	A (0.34)	F (1.09)	A (0.41)	F (1.21)	F (1.38)
Hegenberger/Baldwin	A (0.25)	A (0.56)	A (0.42)	C (0.78)	E (0.91)
Hegenberger/E. 14th	A (0.53)	C (0.75)	A (0.54)	C/D (0.80)	D (0.84)
San Leandro/75th Avenue	A (0.19)	A (0.29)	A (0.19)	A (0.29)	A (0.32)
San Leandro/73rd Avenue	A (0.15)	A (0.30)	A (0.15)	A (0.30)	A (0.33)
73rd Avenue/MacArthur	B (0.64)	C (0.76)	B (0.68)	C (0.78)	D (0.81)
66th Avenue/Coliseum	A (0.28)	F (1.09)	A (0.36)	F (1.16)	F (1.39)
66th Avenue/San Leandro	A (0.45)	F (1.15)	A (0.51)	F (1.22)	F (1.44)
66th Avenue/E. 14th	A (0.53)	C (0.72)	B/C (0.63)	D (0.81)	D (0.85)
High/Coliseum	C (0.72)	F (1.27)	C/D (0.72)	F (1.27)	F (1.44)
High/Oakport	A (0.56)	A (0.58)	B (0.56)	A (0.58)	A (0.59)
66th Avenue/SB 880 ramp	A (0.09)	A (0.41)	A (0.42)	B (0.62)	B/C (0.70)
Edes Avenue/NB 880 ramp	A (0.24)	A (0.31)	A (0.32)	A (0.38)	A (0.39)

/a/ Future base is existing plus event plus cumulative.

SOURCE: Korve Engineering, Inc.

Scenario 3. The project traffic for Monday night football would not degrade in LOS significantly at any of the study intersections (see Table 17). Six intersections would operate at LOS F as projected under the future base condition. In addition, the intersection of Edes Avenue / northbound I-880 off-ramp would operate at LOS E as projected under the future base condition. The remaining locations would operate at LOS D or better.

TABLE 17: COMPARISON OF SERVICE LEVELS

Scenario 3: Football Event - Monday P.M. Period					
<u>Intersection</u>	<u>Existing</u>	<u>Existing & Event</u>	<u>Existing & Cumulative</u>	<u>Future Base /a/</u>	<u>Future Base /a/ & Project</u>
Hegenberger/Edgewater	F (1.07)	F (1.07)	F (1.07)	F (1.07)	F (1.07)
Hegenberger/Coliseum	B (0.62)	F (1.23)	B/C (0.70)	F (1.35)	F (1.49)
Hegenberger/Baldwin	A (0.39)	A (0.49)	A (0.58)	B (0.68)	C (0.72)
Hegenberger/E. 14th	B (0.61)	B (0.68)	B (0.63)	B/C (0.70)	C (0.71)
San Leandro/75th Avenue	A (0.54)	C (0.75)	A (0.54)	C (0.75)	D (0.85)
San Leandro/73rd Avenue	A (0.36)	A (0.47)	A (0.36)	A (0.47)	A (0.48)
73rd Avenue/MacArthur	-	-	-	-	-
66th Avenue/Coliseum	A (0.42)	F (1.15)	A (0.49)	F (1.30)	F (1.41)
66th Avenue/San Leandro	C (0.76)	F (1.09)	D (0.82)	F (1.16)	F (1.29)
66th Avenue/E. 14th	A (0.59)	B (0.65)	B (0.67)	C (0.73)	C (0.74)
High/Coliseum	F (1.04)	F (1.14)	F (1.04)	F (1.14)	F (1.16)
High/Oakport	D (0.84)	F (1.25)	D (0.84)	F (1.25)	F (1.33)
66th Avenue/SB 880 ramp	A (0.32)	A (0.59)	A (0.58)	D (0.85)	D/E (0.90)
Edes Avenue/NB 880 ramp	A (0.51)	A (0.88)	A (0.57)	E (0.94)	E/F (1.01)

/a/ Future base is existing plus event plus cumulative.

SOURCE: Korve Engineering, Inc.

Scenario 4. The project traffic would not significantly affect any of the study intersections for the weekday day baseball game (see Table 18). Two intersections are projected to operate at LOS F under the future base condition. The remaining locations would operate at LOS D or better.

Scenario 5. One intersection would experience change in LOS due to project traffic before the weekday night baseball game (see Table 19). The change in LOS would not be considered significant, because the volume / capacity ratio at the intersection would

TABLE 18: COMPARISON OF SERVICE LEVELS

Scenario 4: Baseball Day Event - Weekday P.M. Period

<u>Intersection</u>	<u>Existing</u>	<u>Existing & Event</u>	<u>Existing & Cumulative</u>	<u>Future & Base /a/</u>	<u>Future Base /a/ & Project</u>
Hegenberger/Edgewater	F (1.07)	F (1.07)	F (1.07)	F (1.07)	F (1.07)
Hegenberger/Coliseum	B (0.62)	C (0.72)	B/C (0.70)	C/D (0.80)	D (0.81)
Hegenberger/Baldwin	A (0.39)	A (0.40)	A (0.58)	A/B (0.60)	A/B (0.60)
Hegenberger/E. 14th	B (0.61)	B (0.62)	B (0.63)	B (0.65)	B (0.65)
San Leandro/75th Avenue	A (0.54)	A (0.54)	A (0.54)	A (0.54)	A (0.54)
San Leandro/73rd Avenue	A (0.36)	A (0.37)	A (0.36)	A (0.37)	A (0.38)
73rd Avenue/MacArthur	-	-	-	-	-
66th Avenue/Coliseum	A (0.42)	A (0.51)	A (0.49)	A (0.59)	A/B (0.60)
66th Avenue/San Leandro	C (0.76)	D (0.83)	D (0.82)	D (0.89)	D/E (0.90)
66th Avenue/E. 14th	A (0.59)	A/B (0.60)	B (0.67)	B (0.69)	B (0.69)
High/Coliseum	F (1.04)	F (1.08)	F (1.04)	F (1.09)	F (1.09)
High/Oakport	D (0.84)	D (0.84)	D (0.84)	D (0.84)	D (0.84)
66th Avenue/SB 880 ramp	A (0.32)	A (0.33)	A (0.58)	D (0.58)	D (0.58)
Edes Avenue/NB 880 ramp	A (0.51)	A (0.52)	A (0.57)	A (0.58)	A (0.58)

/a/ Future base is existing plus event plus cumulative.

SOURCE: Korve Engineering, Inc.

change by 0.02 or less. The intersection of 66th / San Leandro would experience a change from LOS E/F to LOS F. Four of the intersections are projected to operate at LOS F under the future base conditions. The remaining locations would operate at LOS C or better.

Scenario 6. Three intersections would experience changes in service levels as a result of traffic under this scenario (see Table 20). At all three locations, the change would not be significant, because the projected conditions would be LOS C or better. The

TABLE 19: COMPARISON OF SERVICE LEVELS

Scenario 5: Baseball Night Event - Weekday P.M. Period

<u>Intersection</u>	<u>Existing</u>	<u>Existing & Event</u>	<u>Existing & Cumulative</u>	<u>Future Base /a/</u>	<u>Future Base /a/ & Project</u>
Hegenberger/Edgewater	F (1.07)	F (1.07)	F (1.07)	F (1.07)	F (1.07)
Hegenberger/Coliseum	B (0.62)	D (0.81)	B/C (0.70)	E (0.91)	E (0.94)
Hegenberger/Baldwin	A (0.39)	A (0.42)	A (0.58)	B (0.62)	B (0.63)
Hegenberger/E. 14th	B (0.61)	B (0.64)	B (0.63)	B (0.66)	B (0.66)
San Leandro/75th Avenue	A (0.54)	B (0.64)	A (0.54)	B (0.64)	B (0.65)
San Leandro/73rd Avenue	A (0.36)	A (0.40)	A (0.36)	A (0.40)	A (0.41)
73rd Avenue/MacArthur	-	-	-	-	-
66th Avenue/Coliseum	A (0.42)	A (0.58)	A (0.49)	B (0.66)	B (0.68)
66th Avenue/San Leandro	C (0.76)	E (0.93)	D (0.82)	E/F (1.00)	F (1.02)
66th Avenue/E. 14th	A (0.59)	B (0.62)	B (0.67)	B/C (0.70)	B/C (0.70)
High/Coliseum	F (1.04)	F (1.08)	F (1.04)	F (1.08)	F (1.08)
High/Oakport	D (0.84)	F (1.06)	D (0.84)	F (1.06)	F (1.08)
66th Avenue/SB 880 ramp	A (0.32)	A (0.41)	A (0.58)	B (0.67)	B (0.68)
Edes Avenue/NB 880 ramp	A (0.51)	B (0.64)	A (0.57)	C (0.71)	C (0.72)

/a/ Future base is existing plus event plus project.

SOURCE: Korve Engineering, Inc.

intersection of 66th / Coliseum would degrade from LOS B to LOS B/C, while the intersection of 66th / E. 14th would degrade from LOS B/C to LOS C. The ramp junction of 66th Avenue with the southbound off-ramp from I-880 would experience a change from LOS B to LOS B/C. Four of the intersections are projected to operate at LOS F and one at LOS E under the future base conditions. The remaining locations would operate at LOS C or better.

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TABLE 20: COMPARISON OF SERVICE LEVELS

Scenario 6: Basketball and Baseball Night Events - Weekday P.M. Period					
<u>Intersection</u>	<u>Existing</u>	<u>Existing & Event</u>	<u>Existing & Cumulative</u>	<u>Future Base /a/</u>	<u>Future Base /a/ & Project</u>
Hegenberger/Edgewater	F (1.07)	F (1.07)	F (1.07)	F (1.07)	F (1.07)
Hegenberger/Coliseum	B (0.62)	D (0.87)	B/C (0.70)	E (0.95)	E (0.99)
Hegenberger/Baldwin	A (0.39)	A (0.44)	A (0.58)	B (0.63)	B (0.64)
Hegenberger/E. 14th	B (0.61)	B (0.65)	B (0.63)	B (0.67)	B (0.67)
San Leandro/75th Avenue	A (0.54)	B (0.64)	A (0.54)	B (0.64)	B (0.67)
San Leandro/73rd Avenue	A (0.36)	A (0.41)	A (0.37)	A (0.41)	A (0.42)
73rd Avenue/MacArthur	-	-	-	-	-
66th Avenue/Coliseum	A (0.42)	B (0.62)	A (0.49)	B (0.68)	B/C (0.70)
66th Avenue/San Leandro	C (0.76)	E (0.95)	D (0.82)	F (1.01)	F (1.04)
66th Avenue/E. 14th	A (0.59)	B (0.62)	B (0.67)	B/C (0.70)	C (0.71)
High/Coliseum	F (1.04)	F (1.08)	F (1.04)	F (1.08)	F (1.09)
High/Oakport	D (0.84)	F (1.09)	D (0.84)	F (1.09)	F (1.11)
66th Avenue/SB 880 ramp	A (0.32)	A (0.43)	A (0.58)	B (0.69)	B/C (0.70)
Edes Avenue/NB 800 ramp	A (0.51)	B (0.67)	A (0.57)	C (0.73)	C (0.75)

/a/ Future base is existing plus event plus cumulative.

SOURCE: Korve Engineering, Inc.

Harbor Bay / Doolittle Drive. This intersection, which operates at LOS A under existing conditions and LOS C under cumulative baseline conditions, would operate at LOS C ($v/c = 0.75$) with the addition of project traffic.

Project Parking Impacts

The added parking demand attributable to the expansion of the Coliseum Stadium is based on the estimated increase in attendance levels shown in Table 12. This includes

an added 10,000 patrons for football games (Scenarios 1-3), 3,000 patrons for weekday day baseball games (Scenario 4), and 3,500 patrons for weekday night baseball games (Scenarios 5 and 6). The estimated parking demand for the added net project traffic, as well as the total event demand, is shown in Table 21.

The net project demand for additional parking would be 2,700 stalls for football games, 840 stalls for weekday day baseball games, and 950 stalls for weekday night baseball games. All of the 2,700 parking stalls for football games would have to be accommodated in off-site parking facilities, because the on-site lots are currently full with a capacity football game. This added football parking demand would be distributed primarily to areas east and west of the project. The primary use of off-street lots, up to 1,000 stalls, would occur at the existing commercial parking lots along Edgewater Drive to the west of the Coliseum Complex. The remaining 1,700 vehicles would park in on-street areas located to the north, east, and west of the project.

The weekday baseball events would accommodate the majority of the added parking demand with the existing on-site lot. The existing on-site lots could accommodate up to an additional 700 vehicles during weekday day and night events as described in Scenarios 4 through 6. Still, between 140 and 350 vehicles would park in off-site areas to the south and east of the project. This parking demand would be accommodated primarily in existing off-street surface lots (e.g., BART lot, commercial lots along Hegenberger Road, etc.).

Project Transit Impacts

The expansion of the Stadium would add 4,200 (2,100 inbound and 2,100 outbound) passengers to BART with a sell-out football game. This increase is equivalent to almost three additional 10-car train loads before and after each Coliseum event. The additional patrons would cause significant crowding, either in trains, or in and near the Coliseum BART station (depending on whether or not BART continued to "meter" crowds inside the station and on the pedestrian bridge). If the additional demand were not restricted, it would add approximately 120 passengers per train to every train for an hour after each event. If BART continued to restrain passengers from entering the platform, this action would result in substantial additional delays to the typical passenger.

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TABLE 21: COLISEUM EVENT PARKING DEMAND

<u>Event Scenario</u>	<u>Location of Coliseum Patron Parking Sites</u>					
	<u>On-Site</u>	<u>North</u>	<u>South</u>	<u>East</u>	<u>West</u>	<u>Total</u>
Scenario 1: Sunday Football						
Project Parking Demand Only	--	400	500	800	1,000	2,700
Total Parking Demand	8,300	1,180	1,500	1,850	4,300	17,130
Scenario 2: Sunday Football						
Project Parking Demand Only	--	400	500	800	1,000	2,700
Total Parking Demand	8,300	1,180	1,500	1,850	4,300	17,130
Scenario 3: Monday Night Football						
Project Parking Demand Only	--	400	500	800	1,000	2,700
Total Parking Demand	8,300	1,180	1,500	1,850	4,300	17,130
Scenario 4: Weekday Day Baseball						
Project Parking Demand Only	700	--	--	140	--	840
Total Parking Demand	8,300	100	120	950	400	9,870
Scenario 4: Weekday Day Baseball						
Project Parking Demand Only	700	--	--	140	--	840
Total Parking Demand	8,300	100	120	950	400	9,870
Scenario 5: Weekday Night Baseball						
Project Parking Demand Only	600	--	200	150	--	950
Total Parking Demand	8,000	150	480	950	--	9,580
Scenario 6: Weekday Night Basketball						
Project Parking Demand Only	600	--	200	150	--	950
Total Parking Demand	8,300	250	900	1,000	600	11,050

SOURCE: Korve Engineering, Inc.

The Stadium expansion is projected to add 100 AC Transit and 400 charter bus passengers, if the current level of ridership is maintained. This increase is equivalent to only 10-12 bus loads total and would be easily absorbed without significant crowding or schedule delays.

Project Freeway Impacts

The impact of added project traffic attributable to the expansion of the Stadium on freeway congestion would be moderate, and would add to existing congestion levels for events that occur during periods of peak freeway activity. An increase of 10,000 fans

in attendance at a sell-out weekday football game would add approximately 450 vehicles to the southbound I-880 flow just north of the Coliseum during the p.m. peak hour. This addition would represent approximately an 8% increase over existing volumes. This added traffic would result in volumes that exceed the capacity of the freeway, because a weekday evening football game plus an Arena event with the existing Coliseum configuration already result in capacity conditions in the southbound direction.

Approximately 340 vehicles would be added to northbound I-880 flows just south of the Coliseum, representing an increase of 6%. This addition would result in capacity conditions in this direction, as well, when the new Stadium traffic is added to near-capacity (LOS E) conditions that would prevail before a weekday football game even with the existing Stadium configuration. The 50 vehicles added to northbound I-580 as a result of project traffic would not result in any perceptible change in traffic congestion.

The peak activity for a weekend football event would involve outbound traffic flows during the Sunday p.m. peak hour. During the peak hour following a Sunday football game, the project would add approximately 790 vehicles to northbound I-880, 590 vehicles to southbound I-880, and 90 vehicles to northbound I-580. Significant impacts to traffic flow in both directions of I-880 are likely. The additional 90 vehicles on I-580 would not be a substantial effect.

Project Pedestrian Impacts

The number of fans walking all the way to Coliseum events is expected to increase by only about 100, which would not result in significant pedestrian impacts. Also, while the number of fans driving to satellite lots near the Coliseum would likely increase significantly, these additional vehicles would typically have to park outside reasonable walking distance. Even with the existing Stadium configuration, a weekday evening football game plus an Arena event would result in virtually all parking within walking distance being used. Also, with the expected loss of parking on Oakport Street (likely to be replaced with parking farther away on Hegenberger and Edgewater), more satellite parkers would need to depend on the shuttle bus or regular AC Transit route service. Therefore, pedestrian impacts would be limited.

Construction Impacts

The following sections provide an assessment of the impact of construction caused by the construction a new, 20,000-seat Arena, to replace the existing 15,000-seat Arena. Based on the preliminary plan, the proposed Arena would be constructed south side of the existing Arena, while the existing Arena continued to operate. This would result in the loss of approximately 2,000 parking spaces during the one-year construction period. After the construction of the new Arena, the old Arena would be demolished and replaced by a similar number (2,000) of parking spaces. The two most critical event scenarios are evaluated to determine the impact of this temporary loss of parking during construction:

- Monday night football game - p.m. peak hour (inbound flows)
- Weekday night basketball/baseball - p.m. peak hour (inbound flows)

Construction Trip Generation

The construction program would result in no change in the estimated attendance levels for the two event scenarios. As a result, the trip generation of each scenario would not change from that documented in previous sections.

Construction Trip Distribution

The estimated trip distribution would also remain the same as previously assigned. The distribution of the parked vehicles throughout the on-site lot would change as the 2,000 stalls were lost to patrons. This would result in a relocation of that traffic into the areas immediately adjacent to the Coliseum Complex.

The assignment of project traffic uses the trip distribution data from existing events that was discussed previously in Table 5 and shown in Figure 10. Traffic was assigned as follows: 42% of the traffic onto northbound I-880, 31% onto southbound I-880, 5% onto the northbound I-580, and 22% onto local streets.

Construction Service Levels

The shift of 2,000 vehicles from the on-site surface lot to off-site locations would result in a change in travel patterns that would affect several of the intersections which are

immediately adjacent to the Coliseum Complex. Traffic projections were prepared to assess LOS relating to the five present and future conditions for the two construction scenarios. A comparison of the LOS is provided in Tables 22 and 23. The following text provides a discussion of the relative construction impacts of the two alternatives.

TABLE 22: CONSTRUCTION IMPACTS - COMPARISON OF SERVICE LEVELS

Scenario C1: Football Event - Monday P.M. Period

<u>Intersection</u>	<u>Existing</u>	<u>Existing & Event</u>	<u>Existing & Cumulative</u>	<u>Future Base /a/</u>	<u>Future Base /a/ & Project</u>
Hegenberger/Edgewater	F (1.07)	F (1.07)	F (1.07)	F (1.07)	F (1.07)
Hegenberger/Coliseum	B (0.62)	F (1.26)	B/C (0.70)	F (1.38)	F (1.50)
Hegenberger/Baldwin	A (0.39)	A (0.52)	A (0.58)	C (0.72)	C (0.74)
Hegenberger/E. 14th	B (0.61)	B (0.68)	B (0.63)	B/C (0.70)	C (0.71)
San Leandro/75th Avenue	A (0.54)	D (0.83)	A (0.54)	D (0.83)	D (0.85)
San Leandro/73rd Avenue	A (0.36)	A (0.45)	A (0.37)	A (0.45)	A (0.47)
73rd Avenue/MacArthur	-	-	-	-	-
66th Avenue/Coliseum	A (0.42)	F (1.25)	A (0.49)	F (1.41)	F (1.44)
66th Avenue/San Leandro	C (0.76)	F (1.21)	D (0.82)	F (1.28)	F (1.30)
66th Avenue/E. 14th	A (0.59)	B (0.65)	B (0.67)	C (0.74)	C (0.75)
High/Coliseum	F (1.04)	F (1.15)	F (1.04)	F (1.15)	F (1.16)
High/Oakport	D (0.84)	F (1.34)	D (0.84)	F (1.34)	F (1.40)
66th Avenue/SB 880 ramp	A (0.32)	B (0.64)	A (0.58)	D/E (0.90)	E (0.92)
Edes Avenue/NB 800 ramp	A (0.51)	B (0.86)	A (0.57)	E (0.92)	E (0.98)

/a/ Future base is existing plus event plus cumulative.

SOURCE: Kolve Engineering, Inc.

TABLE 23: CONSTRUCTION IMPACTS - COMPARISON OF SERVICE LEVELS

Scenario C2: Basketball and Baseball Night Events - Weekday P.M. Period					
<u>Intersection</u>	<u>Existing</u>	<u>Existing & Event</u>	<u>Existing & Cumulative</u>	<u>Future Base /a/</u>	<u>Future Base /a/ & Project</u>
Hegenberger/Edgewater	F (1.07)	F (1.07)	F (1.07)	F (1.07)	F (1.07)
Hegenberger/Coliseum	B (0.62)	D (0.80)	B/C (0.70)	E (0.95)	E (0.99)
Hegenberger/Baldwin	A (0.39)	A (0.45)	A (0.58)	B (0.63)	B (0.64)
Hegenberger/E. 14th	B (0.61)	B (0.65)	B (0.63)	B (0.67)	B (0.67)
San Leandro/75th Avenue	A (0.54)	B (0.67)	A (0.54)	B (0.64)	B (0.67)
San Leandro/73rd Avenue	A (0.36)	A (0.41)	A (0.37)	A (0.41)	A (0.42)
73rd Avenue/MacArthur	-	-	-	-	-
66th Avenue/Coliseum	A (0.42)	B (0.64)	A (0.49)	B/C (0.70)	C (0.72)
66th Avenue/San Leandro	C (0.76)	E (0.96)	D (0.82)	F (1.03)	F (1.06)
66th Avenue/E. 14th	A (0.59)	B (0.62)	B (0.67)	B/C (0.70)	C (0.71)
High/Coliseum	F (1.04)	F (1.09)	F (1.04)	F (1.09)	F (1.09)
High/Oakport	D (0.84)	F (1.10)	D (0.84)	F (1.10)	F (1.12)
66th Avenue/SB 880 ramp	A (0.32)	A (0.49)	A (0.58)	C (0.75)	C (0.76)
Edes Avenue/NB 800 ramp	A (0.51)	B (0.67)	A (0.57)	C (0.73)	C (0.75)

/a/ Future Base is existing plus event plus cumulative.

SOURCE: Kolve Engineering, Inc.

Scenario C1. The construction scenarios for Monday night football would result in substantial increases in congestion at the intersections of 66th / Coliseum, 66th / San Leandro, and High / Oakport from the non-construction scenario for Monday night football. (See Table 22) This scenario would result in the shift of patrons from the south parking lot to areas north and east of the Coliseum Complex.

Six intersections would operate at LOS F as projected under the non-construction scenario. In addition, the intersections of 66th Avenue / southbound I-880 off-ramp and Edes Avenue / northbound I-880 off-ramp would operate at LOS E as projected under the future base condition. The remaining locations would operate a LOS D or better.

Scenario C2. The second construction scenario, which assesses the impact on concurrent weekday night basketball and baseball games, would not result in any significant change in LOS from the non-construction scenarios. (See Table 23) The intersection of Hegenberger / Coliseum would experience a minor decrease in traffic LOS because of the displacement of parking on the south side of the Coliseum parking lot. The remaining intersections would experience no significant change in either LOS or v/c ratio.

Four of the intersections would operate at LOS F and one at LOS E, as projected under the non-construction scenario. The remaining locations would operate at LOS C or better.

MITIGATION

A number of potential measures are proposed to mitigate future traffic conditions in the Coliseum Complex area. This section addresses both project-related and cumulative improvements that would mitigate unacceptable traffic conditions.

Project-Related Mitigation

Traffic Improvements

The mitigation program for traffic impacts includes four suggested elements:

- Charter/Park & Ride Express Bus Program
- Exclusive Bus Gate at Baldwin / Hegenberger
- Additional Parking Lots and Shuttle Service near Coliseum
- BART and AC Transit Operating Changes

The principal goal of the program would be to expand express bus ridership to the Coliseum significantly. Without this program, auto trips to the Coliseum (and the immediately adjacent area) for football events are projected to increase by 2,700 vehicles before and after events (a 20.4% increase). With this mitigation program, vehicle trips are projected to increase by 840 (or 6.3%). Projected modal shifts are shown in Table 24.

This four-part mitigation program should be achievable, based on similar programs at other sports facilities and earlier experience at the Oakland Coliseum. For example, Candlestick Park hosts football games, with a seating capacity of 65,700 (about the same as an expanded Coliseum Stadium) yet has much poorer highway access and essentially no rail transit service.

A fifth mitigation measure (BART Coliseum Station improvements) is described. This measure would not be needed to mitigate project impacts if the other elements are successfully implemented. Nevertheless, the BART improvements are a mitigation alternative that would enable BART to carry substantially greater ridership on BART and preclude the need for a major charter / express bus program.

TABLE 24: PROJECTED TRAVEL MODE CHANGES WITH STADIUM EXPANSION AND MITIGATION PROGRAM

<u>Mode</u>	<u>Existing Stadium Seating</u>		<u>Expanded Stadium</u>		<u>Expanded Stadium With Mitigation Program</u>	
	<u>Number</u>	<u>Percent</u>	<u>Increase</u>	<u>Percent</u>	<u>Increase</u>	<u>Percent</u>
Auto Driver	13,200	27	+2,700	27	+800	8
Auto Pass.	23,000	46	+4,600	46	+1,500	15
BART	10,300	21	+2,100	21	+2,500	25
AC Transit Regular Service	500	1	+100	1	+100	1
Charter Bus	2,000	4	+400	4	+5,000	50
Walk / Bike	500	1	+100	1	+100	1

SOURCE: Kolve Engineering, Inc.

Traffic Mitigation Measure 1: Express / Charter Bus Program. This measure would involve the development of a program to increase bus ridership to Coliseum sell-out events. Bus service would be provided by public transit operators (possibly AC Transit) and private charter companies. This effort would likely be managed and subsidized by the Coliseum Board.

BART is expected to remain the most important transit link to the Coliseum. The objectives of the bus program would be to relieve the load on BART and to provide transit service from areas not well served by BART today. This program could add 5,000 bus passengers to the 2,000 charter bus passengers served for the Raiders exhibition game.

Figure 24 presents an example express bus program based heavily on that employed by AC Transit for past Oakland Raiders games through the 1981 season. This program uses large parking lots as "Park and Ride" staging areas. About half of these lots are attached to BART stations. Many of these park-and-ride facilities are heavily used on weekdays by commuters and, as such, would be primarily used for weekend events. Their use would be limited during Monday night football games and for weekday night baseball or basketball games. While passengers from these park-and-ride facilities obviously could use BART, the buses can have several advantages for fans and the transportation system. They relieve pressure on BART, particularly on the Coliseum BART station. Buses provide fans with a potentially quicker trip to the Stadium because they can drop fans off right at the Stadium. By creating a festive, sporting atmosphere on board the bus, they may attract many who otherwise would drive.

AC Transit previously carried about 4,000-4,500 passengers to Sunday Raiders games.¹⁸ Typically, each bus could carry at least two separate loads (approximately 50 passengers each) to the Stadium. The Southshore Shopping Center in Alameda was the most popular Park & Ride location, probably because of its proximity to the Coliseum. There, 12-13 buses, each making 2-3 trips, were used. Based on inbound ridership, AC Transit supervisors would determine the return trip schedule and schedule enough buses so that each bus only needed to make one return trip. All buses typically had left the Stadium lot within 30 minutes after the end of the game.

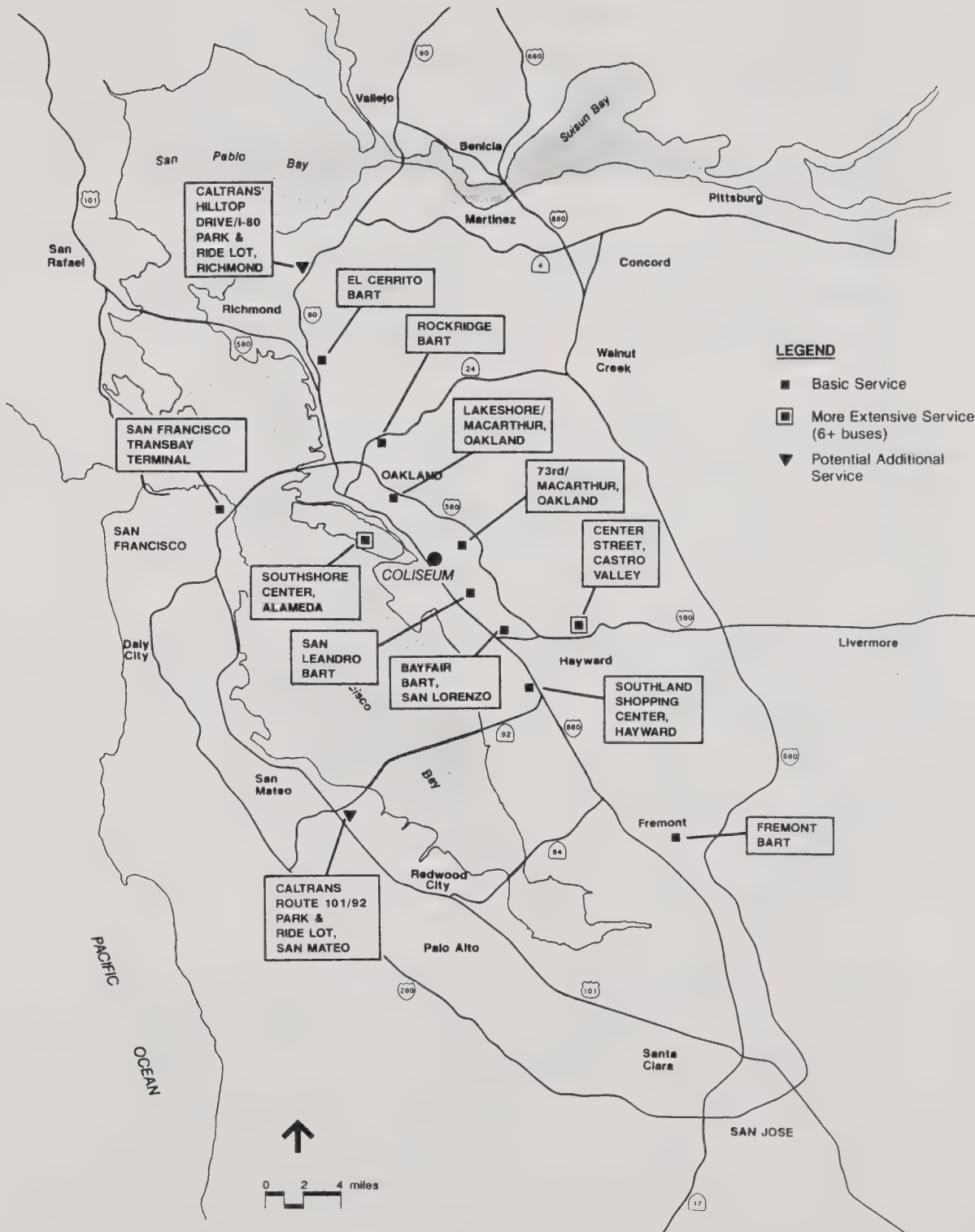


FIGURE 24
CANDIDATE PARK & RIDE LOT AND ORIGIN
LOCATIONS FOR EXPRESS BUS SERVICE

Given its current financial difficulties, AC Transit would likely expect to receive revenues from passengers, and possibly the Coliseum, equal to operating costs. (The regular AC Transit service recovers only about 31% of its operating costs from fares, an amount typical of virtually all public transit operators.) The Coliseum Board could contract with AC Transit or private operators.

In addition to service for the general public, an expanded private charter bus program could be implemented. Charter buses could transport both the general public and special groups (e.g., booster clubs) to the Stadium, principally by subscription.

When the Raiders played in Oakland (through the 1981 season), up to 200 private charter buses transported fans to and from games./19/ This charter program would also be similar to the San Francisco 49'ers program, with 10-12 charter buses, primarily used by booster clubs. In addition 49'ers games are served by three Muni express bus routes and three SAMTRANS routes./20/

Another similar program in California is the extensive Bowl Bus Park & Ride system, operated by the Southern California Rapid Transit District (SCRTD) for Hollywood Bowl concerts. The Bowl seats just under 18,000, yet only has parking for 3,500 cars on-site, with virtually no adjacent parking. Shuttles operate from three lots close to the Bowl, as well as 14 more distant Park & Ride lots. Shuttle buses depart every 10-20 minutes, while express service varies from only 1-2 bus trips to 6 departures in the 90 minutes before the event./21/

Traffic Mitigation Measure 2: Exclusive Bus Gate near Hegenberger / Baldwin and Bus Loop. AC Transit and Coliseum shuttle buses enter the Coliseum Complex via Hegenberger, Baldwin, under the Hegenberger overpass via a private road (Catfish Road) and through a gate that is only available to buses before sell-out games. After games today, this gate is opened to general traffic in an effort to clear the Coliseum parking lots. In order to encourage fans to ride buses to an expanded Stadium, this gate could be kept for exclusive use by buses both before and after games (see Figure 25). The exclusive bus gate would result in faster departures by buses, but would also slow some auto trips.

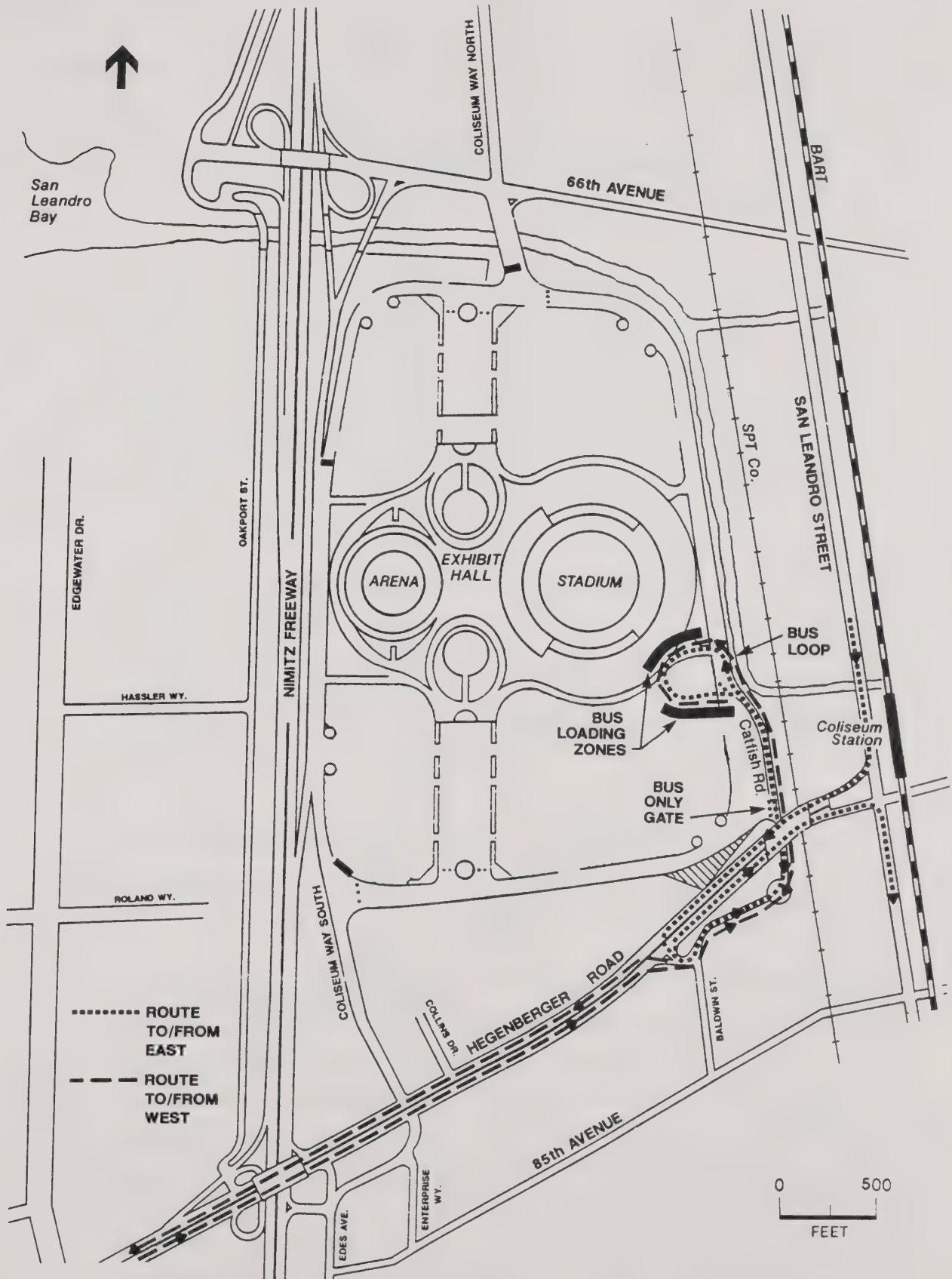


FIGURE 25
RECOMMENDED EXCLUSIVE BUS
ENTRANCE / EXIT AT BALDWIN STREET

In addition, a bus loop could be developed near the current AC Transit shuttle loading area in Lot B. This would provide safe curbside loading areas, as well as benches, shelters and possibly other amenities for waiting passengers. The bus loop would also allow for easier turning around by buses. It would likely result in a loss of about 50 parking spaces.

Traffic Mitigation Measure 3: Additional Lots and Shuttle Service Near Coliseum.

Construction of a value-oriented retail center and other facilities is expected to lead to the loss of approximately 1500 spaces in dirt lots close to the Coliseum on Oakport near 66th Avenue. It will be necessary to replace these spaces and provide additional parking. The Coliseum could operate shuttle buses from nearby lots (just as it has from the Oakport lots). Preferential rates or locations could be adopted for vehicles carrying at least three occupants.

The use of dirt lots along Edgewater could supply approximately 3,100 spaces. Paved lots located at various employment uses on Hegenberger near Edgewater could supply nearly 1,000 parking spaces. Figure 26 shows potential locations for these satellite lots. There are other large parking facilities that could be partially available for use, but are already partially used during typical game periods (e.g., the 400-stall Century movie theater lot).

Access routes would be developed to minimize travel on Hegenberger for vehicles using those lots off Edgewater (particularly for those coming from the north on I-880). This would spread traffic out to a greater degree.

Traffic Mitigation Measure 4: BART and AC Transit Operating Changes. BART could operate trains after sell-out events slightly more frequently than the weekday peak service, with northbound and southbound trains both leaving every 4-5 minutes for 30-45 minutes after events. This mitigation is intended primarily to accommodate peak outbound traffic movements on weekends and weekday nights. The application would be limited for inbound traffic to weekday night events due to typically heavy commute demands during the evening peak hour.

This increased frequency is within the technical capabilities of BART, although it would require close communication with Coliseum station personnel. Running trains more frequently would allow BART to clear up to 70% of expected BART game patronage (about 9,300) within 25 minutes after the end of the game.

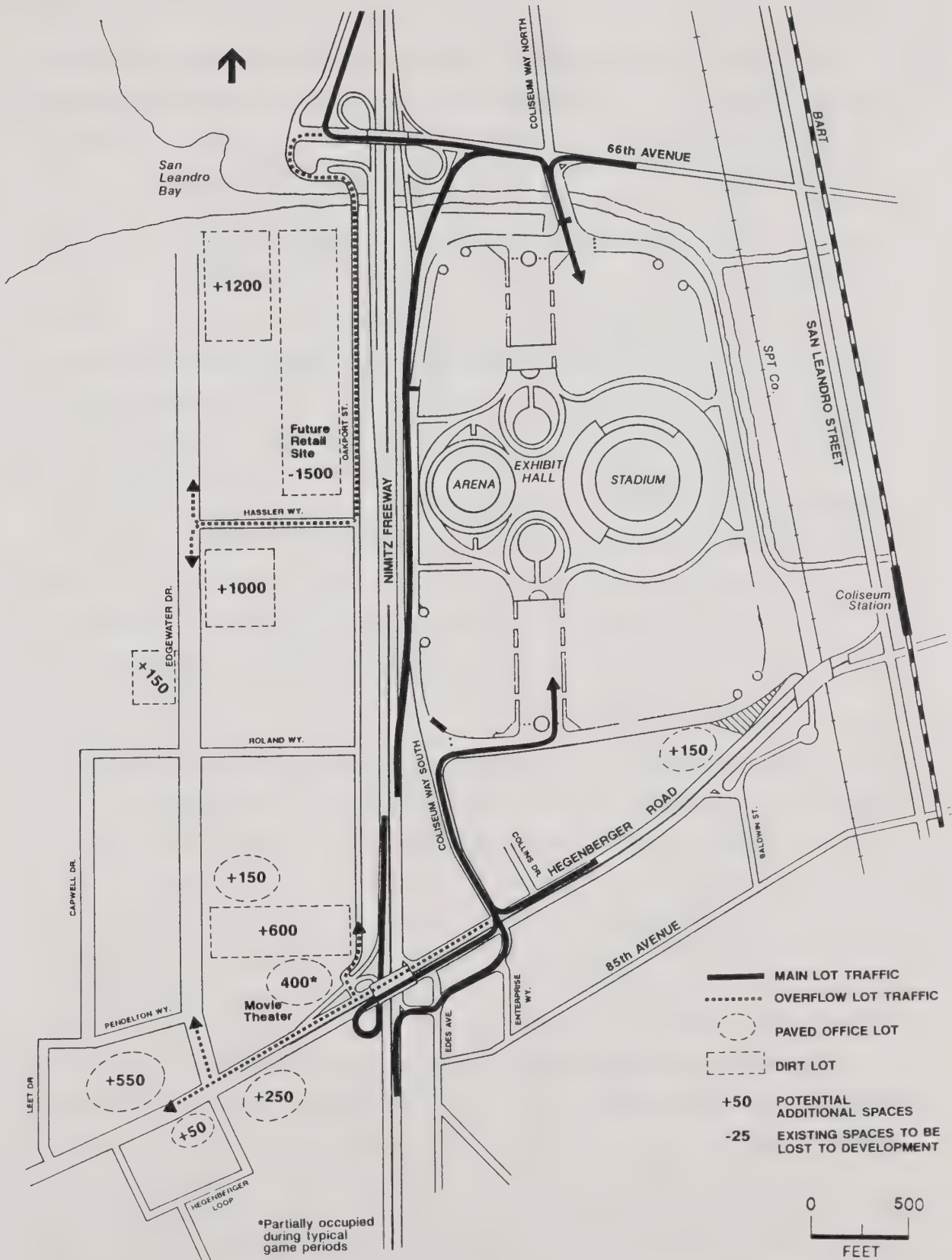


FIGURE 26
POTENTIAL SATELLITE PARKING LOTS

AC Transit would change its regular Sunday and evening service to increase ridership to games. Changes could include game-time resumption of the Route 57 line service north of the Coliseum on MacArthur Boulevard (planned to be phased out with the Comprehensive Service Plan changes). Also the future Route 41 line (Eastmont Mall to Oakland Airport), which is planned for 15-minute Sunday/evening headways, could add limited or express service trips, serving Oakland Hills residents who could park at Eastmont Mall.

Traffic Mitigation 5: Parking Structure and Alternative Access for Coliseum Complex.

The installation of a parking structure that would "deck over" the existing surface lot at the Coliseum Complex is a potential mitigation measure for lost parking spaces during the construction of the Arena complex. During this construction period, approximately 2,000 parking spaces would be lost until a new Arena is completed and the old facility is demolished. The parking spaces would be lost for approximately one year.

The construction of a parking structure at the Coliseum would be costly mitigation, especially in light of the limited use that it would receive. The construction cost for a 2,000 stall garage would range from 16 to 20 million dollars. Parking demand now exceeds on-site parking capacity about 55 days of the year./22/ The demand for on-site parking would exceed capacity on approximately 70 days of the year with the expanded Coliseum: during football games, weekend baseball games, and combined baseball/basketball (e.g., major Arena) activities.

The addition of 2,000 parking spaces would result in an ultimate capacity, after construction was completed, of approximately 11,000 parking stalls. This increase in available parking spaces would lead to a greater length of time required to empty the lot after an event, due both to the added parking stalls and to maneuvering constraints on exiting traffic caused by the presence of the parking structure. This congestion could potentially produce the need to provide an additional access point to the on-site parking facility.

There are two primary access points to the on-site parking facility; Hegenberger Road and 66th Avenue form the two major gateways to the Coliseum. Providing additional access to these two routes from the Coliseum Complex would be difficult because of

the presence of existing or proposed commercial businesses along these arterials. The provision of additional access to the west is not feasible due to the presence of I-880. No additional connections may be made to I-880 because of the proximity of the existing ramps at the Hegenberger Road and 66th Avenue interchanges.

A secondary access is provided from the Coliseum Complex along a series of two-lane local streets via Hegenberger, Baldwin, and under the Hegenberger overpass via a private road (Catfish Road). This route is suggested in Mitigation Measure 2 as an exclusive transit route to the stadium. The route is used for buses prior to events and for all vehicles after events. This route has limited capacity and can not be widened because of constraints under the Hegenberger overpass and along the frontage road between the Hegenberger overpass and Baldwin. This route would not provide additional capacity as an access route, unless it were converted to one-way operation for all vehicles both before and after events. This conversion would require the presence of police personnel during those time periods. Due to the limited capacity it would provide (maximum of two lanes), and the importance of the route to charter buses and AC transit buses, the use of this route to provide additional access is not recommended.

The development of additional access points to the east of the Coliseum Complex would involve the construction of a connection to San Leandro Street. This connection would require a crossing of the Damon Slough and the Southern Pacific Railroad. It would also require the acquisition of right-of-way from the industrial parcels located to the east of the Coliseum. As a connection to the east would have substantial environmental and financial impacts, the provision of additional access to the east is not recommended.

Alternative Traffic Mitigation Measure: BART Coliseum Station Improvements.

According to BART management, the Coliseum BART station could absorb Coliseum fan patronage up to 3,000-5,000 greater than for the typical sell-out event or up to 13,000-15,000 patrons./23/ Beyond this level, crowding on trains or within the station would become unacceptable. As discussed earlier, BART has been restricting passenger flows into the station for 1989 A's playoff and World Series games (for crowds within this range). This restriction effort is a precautionary procedure, because of an incident in which a passenger fell on an escalator as a result of difficulty in getting off onto a crowded platform./24/

BART Directors and staff have discussed the possibility of improving the station's ability to absorb large crowds. With slightly improved clearance of passengers entering the Coliseum, in the half-hour after a game ends, this probably would not be necessary.

Expanding station capacity would have safety and convenience benefits. BART staff have discussed a \$30-50 million platform widening.^{/25/} For example, widening the platform by eight feet on the San Leandro Street (westbound) side would result in platform square footage sufficient to absorb a 10-car trainload of passengers. This capacity estimate is based on the criterion of 8 square feet of platform space per passenger. (See Figure 27).^{/26/} The widening would require moving the southbound track out eight feet. It would also require additional structural columns extending into the existing San Leandro Street right-of-way. The center platform design would be retained in an effort to minimize changes to vertical circulation (stairs, escalators, and elevators) needed for side platforms, because these changes can be extremely expensive. Center platforms are also more efficient because passengers can use all platform space regardless of the direction of travel, whereas with side platforms, passengers in each direction are restricted to half of the total platform space.

Transit Improvements

Two measures that would relieve BART crowding were described earlier as traffic mitigations: increased frequency after games and a widened platform at the Coliseum BART station. If northbound and southbound headways were cut to 4-5 minutes under the first mitigation, this would effectively mitigate transit crowding impacts of increased Coliseum attendance both in trains and at the station. Widening the platform per se would mitigate station crowding impacts, but would not by itself improve conditions on trains.

No significant crowding impacts are expected on regularly scheduled AC Transit service; mitigations are not suggested.

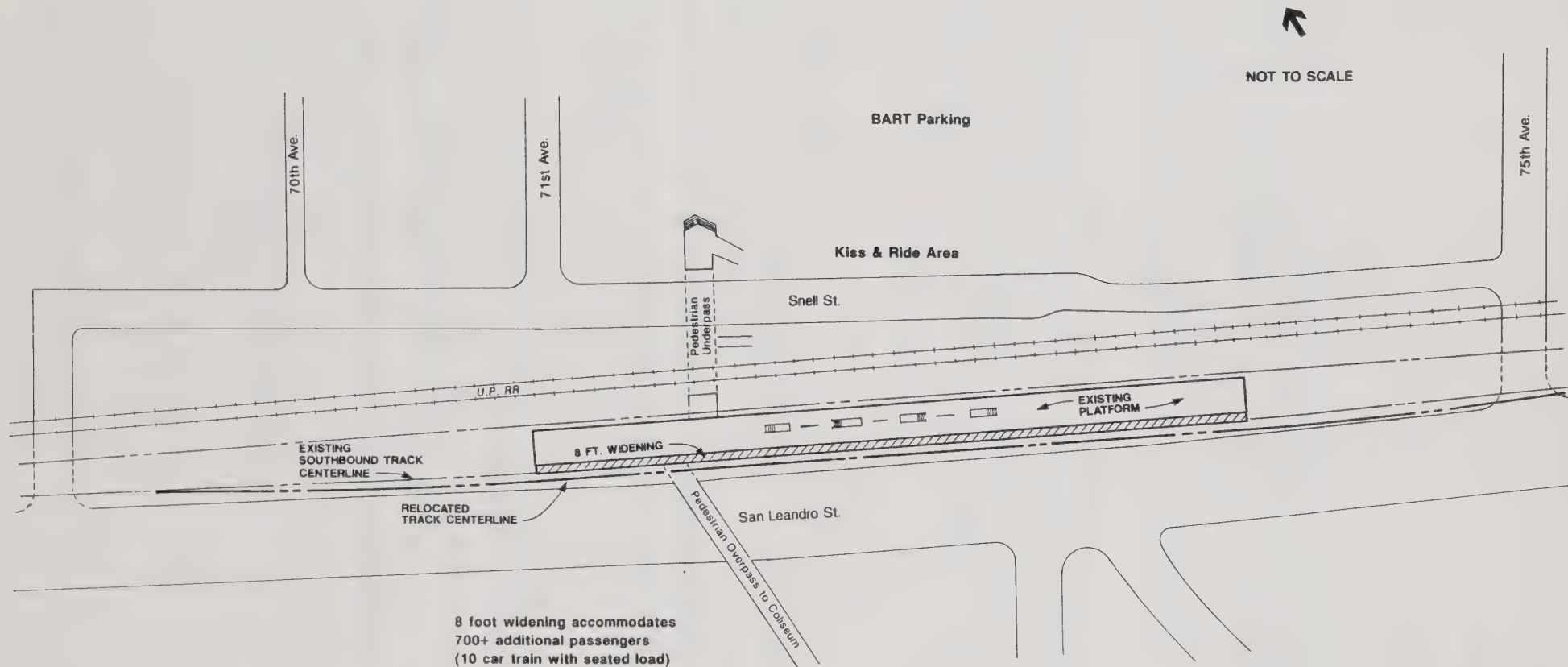


FIGURE 27
SCHEMATIC DESIGN OF BART COLISEUM STATION
PLATFORM WIDENING

Cumulative Mitigations

Traffic Improvements

Edgewater Drive / 66th Avenue Connection. This proposed improvement would provide substantial relief to the intersection of Hegenberger / Edgewater, which currently operates at LOS F during the weekday p.m. peak hour. The Edgewater Drive / 66th Avenue Connection would provide a second access route for businesses along the Edgewater Drive corridor to Interstate 880, as well as to destinations to the north.

Nimitz Freeway Widening. This widening would not provide any direct relief to the study area, because the present eight lane section would be maintained. There would be indirect benefits, which would result from the widening of I-880 to the south through San Leandro and Hayward. This improvement would reduce queues in the southbound direction that originate in the Hayward area, where I-880 now transitions to a six lane section.

Reconstruction of Hegenberger Road Interchange. The exact alignment of this reconstruction is not known at this time. The improvements are designed to eliminate the weave sections on the northbound and southbound Collector-Distributor (C-D) roads that serve the interchange ramp system. The elimination of these weave sections would provide additional capacity for the southbound loop on-ramp for traffic from westbound Hegenberger Road.

Transit Improvements. The proposed overhaul of the AC Transit system and expansion of the BART system would provide an increase in transit service to the study area. This increased service would be most beneficial to existing employment uses and events at the Coliseum. The expanded service area, in conjunction with proposed improvements to the Coliseum BART station and the AC Transit routes, would attract additional transit ridership, which would reduce the number of peak hour vehicles in the study area. Many of the cumulative projects planned for the Coliseum area are commercial uses which would traditionally not generate a substantial number of riders, except for their employees.

OAKLAND-ALAMEDA COUNTY COLISEUM EXPANSION
Draft Environmental Impact Report

NOTES - Transportation

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- /3/ Caltrans District 4, *Environmental Analysis Branch, Environmental Assessment/Initial Study: Proposed Widening on Route 880 from Alvarado-Niles Road in Union City to Davis Street in San Leandro in Alameda County*, November 1987, p. 2.
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- /6/ BART Research Department, personal communication, August 1989.
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- /8/ BART As-built station plans, February 1968.
- /9/ Ray Peters, BART Manager of Station Operations, telephone communication, October 5, 1989.
- /10/ Transportation Research Board, *Highway Capacity Manual*, Special Report 209, 1985.
- /11/ Transportation Research Board, *Highway Capacity Manual*, 1985, p. 13-9.
- /12/ AC Transit Planning and Development Dept., "Comprehensive Service Plan Proposed Changes," 1989; Ron Kilcoyne, Research and Planning Manager, AC Transit, telephone communication, October 2, 1989.
- /13/ U.S. Urban Mass Transportation Administration/Port of Oakland, *Oakland Airport Transit Connector Draft Environmental Impact Statement*, March 1981.
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- /15/ Oakland Airport Business Park Retail Use, Dowling Transportation Engineering, September 21, 1987.
- /16/ "Traffic Study of the Eastern Ends of the City - Phase 2", by Abrams Associates, September 1988, contained in the Addendum for the Final Environmental Impact Report for Harbor Bay Isle.
- /17/ "Site Traffic Impact Analysis for a Proposed Office Building or, Alternatively, A San Francisco 49er Headquarter Training Facility", Barton-Aschman Associates, Inc., March, 1987.
- /18/ Greg Hunter, Senior Supervisor, AC Transit, telephone communication, October 4, 1989.

- /19/ William DiCarlo, Assistant General Manager, Oakland-Alameda County Coliseum Complex, personal interview, September 1989.
- /20/ Candlestick Stadium Operations Department, telephone communication, October 3, 1989.
- /21/ Kim Kevorkian, Hollywood Bowl, September 28, 1989.
- /22/ Robert Quintella, Executive Vice President, Oakland-Alameda County Coliseum Complex, telephone communication, December 7, 1989.
- /23/ Bob Rausch, Supervisor, Train Scheduling, BART, telephone communication, October 11, 1989.
- /24/ Rausch, 1989.
- /25/ Marvin Dalander, Chief of Civil Engineering Section, BART, personal interview, October 5, 1989.
- /26/ Caltrans Office of Planning & Design. *Rail Transit Criteria for System Review and Preliminary Design*, December 1979, page 3-6.7.

C. AIR QUALITY

SETTING

Climate and Meteorology

The air quality of a region is determined by the quantities and types of pollutants emitted, and by the dispersion or accumulation of those pollutants under the influences of local meteorology and topography. The climate of Oakland is shaped by the same forces that influence and control the overall weather patterns of the San Francisco Bay Area. The Bay Area's climate is Mediterranean in character, with mild, rainy winters and warm, dry summers. There is a high percentage of sunshine away from the immediate coast, particularly in summer. Movements of marine air establish the temperature, humidity, wind, and precipitation throughout the year, which in turn depend upon the location and strength of the dominant Pacific high pressure system (the "Pacific High") and the coastal temperature gradient. In general, summer temperatures increase as distance from the coast increases, while winter temperatures follow the opposite trend.

During the summer, the Pacific High normally remains near the California coast. High-pressure systems supply dry air that warms as it descends. This dry, subsiding air often acts as a cap over the cooler marine air near the surface and restricts precipitation. Subsidence inversions may be several thousand feet deep. Together with strong sunlight, they can produce worst-case conditions for the formation of photochemical smog, of which the largest single component is ozone. In winter, the Pacific high-pressure zone breaks down, allowing numerous Pacific fronts to sweep through the area. These fronts bring most of the region's annual precipitation. Between storms there are periods of stagnation characterized by very light surface winds. Surface inversions can form under these conditions. Surface inversions are caused by radiation cooling of land surfaces rather than subsiding air, and can trap pollutant emissions close to the ground. They are most frequent in the morning from October to February. Northwesterly winds, generated by the high pressure zone in the Pacific, are drawn through the Golden Gate and forced into a more westerly orientation.

Once inside the coastal hills, this air mass is split and rechanneled by the east Bay hills, producing south to southeasterly winds at Santa Rosa and northwesterly winds at San Jose. Winter winds are associated mostly with frontal passages, with winds from the south or southwest before passage and northwest winds behind the front. Winds are monitored at Oakland International Airport. Over 46% of the hourly observations recorded at this station revealed winds from the west to northwest at a speed of about 10 miles per hour, about eight percent of the observations revealed calm conditions./1/ Light winds or calm conditions provide little ventilation of pollutant emissions.

Air Quality Regulations, Plans, and Policies

Air quality is controlled through the attainment of ambient standards and enforcement of emissions limits for individual air pollutant sources. The federal Clean Air Act required the U.S. Environmental Protection Agency (EPA) to identify National Ambient Air Quality Standards (NAAQS), levels for protection of public health and welfare. NAAQS have been established for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), suspended particulate matter (PM_{10}), and lead (Pb). California has adopted more stringent ambient standards for these "criteria" pollutants. The Clean Air Act Amendments of 1977 required states to identify areas that were in non-attainment of the NAAQS and to develop State Implementation Plans (SIPs) that demonstrated how the non-attainment areas would be brought into compliance by 1982. Extensions for attainment were granted to 1987 upon EPA approval.

The project area is located in the San Francisco Bay Area Quality Management District (BAAQMD) which has been designated as a non-attainment area with regards to NAAQS for O_3 and CO. Attainment status has been designated for the Basin, however, for NO_2 and SO_2 ./2/ The NAAQS for suspended particulate matter has recently been revised to apply to smaller-diameter particulates (those less than 10 microns, PM_{10}) rather than to total suspended particulates (TSP). Little PM_{10} data have been gathered but, with the possible exception of Santa Clara County, the Bay area will probably be designated an attainment area for PM_{10} .

An Air Quality Plan for the Bay area has been adopted and incorporated into the California SIP as required by the Clean Air Act Amendments of 1977./2/ The established air pollution control strategies intended to attain federal air quality standards by the December 31, 1987 deadline, specified by the Clean Air Amendments. That deadline has now passed. The State of California recently passed the California Clean Air Act (AB2595). The goal of the Act is the attainment and maintenance of state ambient air quality standards by the earliest practicable date. A plan addressing attainment of the state standards must be submitted by the BAAQMD to the Air Resources Board by June 30, 1991. Attainment status has been designated for CO, NO₂, SO₂, and lead, but the Bay area remains a non-attainment area for O₃ and PM₁₀.

The BAAQMD is the local agency empowered to regulate air pollutant emissions. The BAAQMD regulates air quality through its permit authority for most types of stationary emission sources and through its planning and review activities.

Existing Air Quality

The BAAQMD operates a regional air quality monitoring network that provides information on average concentrations of pollutants for which state or federal agencies have established ambient air quality standards. Table 25 contains a five-year summary of monitoring data for the criteria pollutants. Pollutant concentrations are compared with state ambient air quality standards, which are equal to or more stringent than the corresponding federal standards. Air quality data for O₃ and CO are from the Alice Street monitoring station in Oakland. Data for NO₂, SO₂, and TSP are from the 13th Street monitoring station in Richmond, as those three pollutants are not monitored at the Oakland - Alice Street station.

Criteria Pollutants

Ozone (O₃). The most severe air quality problem in the Bay area is high concentrations of O₃. High levels of O₃ cause eye irritation and can impair respiratory functions. O₃ is not emitted directly into the atmosphere, but is a secondary pollutant produced through photochemical reactions involving hydrocarbons (HC) and nitrogen oxides (NO_x).

TABLE 25: OAKLAND AIR POLLUTANT SUMMARY, 1983-1987

Station: Alice Street, Oakland (O₃, CO); 13th Street, Richmond (NO₂, SO₂, TSP)

<u>POLLUTANT:</u>	<u>Standard</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
<u>Ozone (O₃; Oxidant)</u>						
Highest 1-hr. average, ppm /b/	0.10 /c/	0.11	0.12	0.09	0.09	0.10*
Number of standard excesses		2	1	0	0	1
<u>Carbon Monoxide (CO)</u>						
Highest 1-hr. average, ppm	20.0 /d/	11	9	12	9	10.0
Number of standard excesses		0	0	0	0	0
Highest 8-hr. average, ppm	9.0 /d/	8.0	5.8	7.5	4.9	5.6
Number of standard excesses		0	0	0	0	0
<u>Nitrogen Dioxide (NO₂)</u>						
Highest 1-hr. average, ppm	0.25 /d/	0.15	0.11	0.13	0.9*	0.11
Number of standard excesses		0	0	0	0	0
<u>Sulfur Dioxide (SO₂)</u>						
Highest 24-hour average, ppm	0.05 /c/	0.016	0.012	0.01	0.02*	0.04
Number of standard excesses		0	0	0	0	0
<u>Total Suspended Particulate (TSP)</u>						
Highest 24-hr. average, ug /m ³ /b,e/	100/d,f/	142	125	85	99	73
Number of standard excesses		3	2	0	0*	0
Annual Geometric Mean, ug/m ³	60.0/d,f/	55.8	52.9	37.8	43.0	40.9*

Air quality data for O₃ and CO are from the Alice Street monitoring station in Oakland. Data for NO₂, SO₂, and TSP are from the 13th Street monitoring station in Richmond.

/b/ ppm: parts per million; ug/m³: micrograms per cubic meter.

/c/ State standard, not to be equaled or exceeded.

/d/ State standard, may be equaled but not exceeded.

/e/ Measured every six days (other pollutants are measured continuously).

/f/ The California Air Resources Board has redefined this standard to apply to "inhalable" particles only (i.e., those less than 10 microns in diameter). The new 24-hr. standard is 50 ug/m³ and the new annual geometric mean is 30 ug/m³. Data on the particle size distribution of the TSP sampled at the Oakland monitoring station is unavailable. According to the ARB, however, the new standards are "reasonably equivalent" to the old standards shown in the above table (see BAAQMD, Air Currents, March 1983).

/*/ Data presented are valid, but incomplete in that an insufficient number of valid data points were collected to meet EPA and/ or ARB criteria for representatives.

SOURCES: California Air Resources Board, California Air Quality Data Summaries, 1984-1988.

Significant O₃ generation requires about one to three hours in a stable atmosphere with strong sunlight. For this reason, the months of April to October are the "ozone season." O₃ is a regional pollutant because O₃ precursors are transported and diffused by wind concurrently with the reaction process. The numerous small sources emitting most of the HC and NO_x are spread throughout the region. Table 25 shows that the state O₃ standard was exceeded four times in Oakland from 1984 to 1988.

Carbon Monoxide (CO). About 92% of the CO emitted in the Bay area comes from motor vehicles.^{/3/} Ambient CO levels normally correspond closely to the spatial and temporal distributions of vehicular traffic. CO concentrations are also influenced by wind speed and atmospheric mixing. Under inversion conditions, CO level may be more uniformly distributed over an area out to some distance from vehicular sources. High concentrations of CO can impair the transport of oxygen in the bloodstream and thereby aggravate cardiovascular disease and cause fatigue, headaches, and dizziness. Neither the state one-hour CO standard nor the state eight-hour CO standard were exceeded in the past five years in Oakland (see Table 25); however, relatively high levels would be expected along heavily travelled roads and near busy intersections.

Suspended Particulate (PM₁₀). Both state and federal particulate standards now apply to smaller-diameter particulates rather than to total suspended particulates (TSP). TSP refers to particulates with a diameter of 30 microns or less while PM₁₀ refers to that fraction of TSP with diameters of 10 microns or less. Recent studies have shown that the smaller-diameter particulates represent the health hazard posed by suspended particulate matter. TSP levels at the Richmond monitoring station exceeded state standards in 1985 on two occasions and in 1984 on three occasions. No data on PM₁₀ are available for the Oakland or Richmond stations.

Nitrogen Dioxide (NO₂). NO₂ is the "whiskey brown" colored gas readily visible during periods of heavy air pollution. The major sources of NO₂ are vehicular, residential, and industrial combustion. The standards for NO₂ are being met in the Bay area, and the BAAQMD does not expect these standards to be exceeded in the future.

Sulfur Dioxide (SO₂). The major source of SO₂ in the Air Basin is combustion of high-sulfur fuels. Ambient standards for SO₂ are being met throughout the Bay Area, and the BAAQMD does not expect these standards to be exceeded in the future.

Sensitive Receptors

The old and the infirm are more susceptible to respiratory infections and other air-quality-related health problems than the general public. For this reason, land uses such as schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality. Agricultural crops, especially broad-leaved produce crops and cultivated flowers, are also sensitive to air pollutants such as O_3 , NO_x , and SO_2 .

Because people in residential districts are often home for extended periods, the exposure times to air pollutants are quite long. Industrial and commercial districts are less sensitive to poor air quality because exposure periods are shorter and workers in these districts are, in general, the healthiest segment of the public. Recreational land uses are moderately sensitive to air pollution. Although exposure periods are generally short in such places, vigorous exercise associated with recreation places a high demand on the human respiratory functions, which air pollution can impair. Noticeable air pollution also detracts from the recreational experience. The sensitive receptors in the vicinity of the Oakland Coliseum include the residential areas to the east of the Coliseum.

Major Point Sources

The BAAQMD list three major point sources of air pollution within approximate one mile of the project area. American Brass & Iron Foundry at 7825 San Leandro Street, Brockway Glass at 8717 G Street, and Safeway Stores Inc. Soap Plant at 1100 77th Avenue appear along with 10 other entries in the 1987 Emission Inventory Summary Report./4/

IMPACTS

Construction Effects

Project construction would result in the short-term emission of criteria air pollutants. The primary air pollutant would be fugitive dust (i.e., particulate matter that is not released through a stack or tailpipe) generated by truck movement and through land clearing, excavation, and grading activities. Exhaust emissions from construction vehicles and equipment principally involve NO_x and CO. The extent of exhaust emissions due to construction generally poses no significant air quality concerns.

Fugitive dust emissions vary according to the level and type of activity, silt content of the soil, soil moisture, and prevailing weather. Larger sized particulates do not generally pose a health concern, but can become a nuisance by settling out of the atmosphere onto parked cars and residences. Most of this dustfall can be expected to occur within 800 feet of the project.

The finer particles of fugitive dust (e.g., those less than or equal to 10 microns in diameter) would be a health concern if concentrations violated ambient standards. Project construction could temporarily increase ambient PM₁₀ concentrations in the vicinity of the project to unacceptable levels, especially under unfavorable meteorological conditions.

Project Emissions

The project is expected to increase motor vehicle traffic. Traffic, attendant increases in vehicle delay at intersections, and reduced speeds through intersections result in increased vehicle CO emissions. Increases in vehicle volumes are offset by improvements in pollution control systems. Table 25 shows reductions in all one-mile hour concentrations.

Local Carbon Monoxide Concentrations

CO concentrations normally consist of an area-wide background concentration upon which micro-scale peaks are superimposed by local sources. The background CO concentration is a function of areawide traffic characteristics, while the local CO concentration is a function of traffic characteristics at the point of interest. CO concentrations in the evening peak hour were estimated using a computer-based air pollutant dispersion model, CALINE 4, developed by the California Department of Transportation. Table 26 presents predictions of CO concentrations for the existing situation and for the future case with the project.

CO concentrations were estimated for four locations, in the project vicinity (Figure 28). These receptor locations include:

1. San Leandro Street at 73rd Avenue
2. San Leandro Street at 76th Avenue
3. San Leandro Street at 66th Avenue
4. Hegenberger Road and Coliseum Way

**TABLE 26: ESTIMATED WORST-CASE EXISTING AND FUTURE CO
CONCENTRATIONS IN PROJECT VICINITY / a,b,c,d /**

<u>Location</u>	<u>Averaging Time</u>	<u>Existing</u>			<u>1995 With Project</u>	
		<u>No Event</u>	<u>Football</u>	<u>Baseball</u>	<u>Football</u>	<u>Baseball</u>
1. San Leandro / 73rd Avenue	1-Hour	10.9	11.9	11.6	10.4	9.6
	8-Hour	<u>9.4/e/</u>	<u>10.1</u>	<u>9.9</u>	<u>9.2</u>	8.4
2. San Leandro / 76th Avenue	1-Hour	11.7	11.7	11.8	10.4	10.1
	8-Hour	<u>10.0</u>	<u>10.0</u>	<u>10.0</u>	<u>9.0</u>	8.8
3. San Leandro / 66th Avenue	1-Hour	10.1	12.3	11.2	10.7	10.1
	8-Hour	<u>8.8</u>	<u>10.4</u>	<u>9.6</u>	<u>9.2</u>	8.8
4. Hegenberger Road / Coliseum Way	1-Hour	15.0	21.0	16.5	12.7	16.0
	8-Hour	<u>12.3</u>	<u>16.5</u>	<u>13.3</u>	<u>10.6</u>	<u>12.9</u>

- /a/ Worst-case scenarios are based on weekday evening traffic for the no event, baseball games, and football games (Monday night).
- /b/ Concentrations given in parts per million. The state one-hour standard is 20 ppm; the eight hour standard is nine ppm. Federal standards are 35 ppm and nine ppm, respectively.
- /c/ These estimates take into account background and local CO contributions. Local contributions are derived using traffic counts furnished by Korve Engineering and CALINE 4 software for microcomputers. Background concentrations were furnished by BAAQMD./5/
- /d/ Receptors listed here appear as 1, 4, 7, and 11 in data files.
- /e/ Underlined values represent exceedances of state or federal standards.

Excesses of the state ambient one-hour or eight-hour average CO standard were estimated at all receptor locations for existing and future cases. The largest CO concentration is expected to occur at Site 4, near Hegenberger / Coliseum Way Intersection, located at the southwestern corner of the project site. The state CO standard for one-hour concentrations is more stringent than the federal standard, they are 20 versus 35 parts per million (ppm), respectively. The state and federal eight CO limit is nine ppm. Excesses are underlined in Table 26.

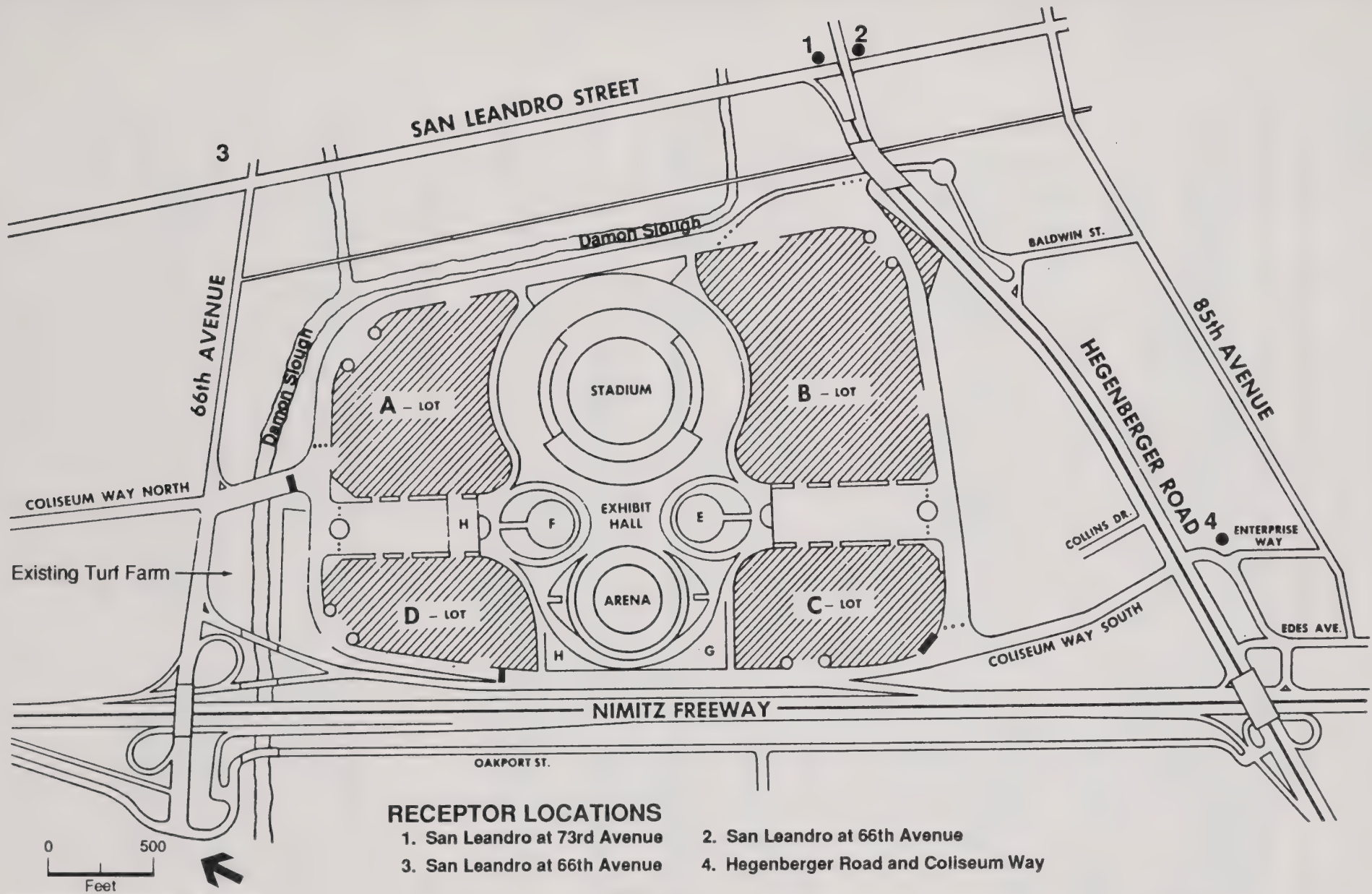


FIGURE 28
CALINE 4 RECEPTOR LOCATIONS
FOR CO CONCENTRATIONS

As shown in Table 26, with the project, future CO concentrations at all five receptor locations would be less than existing concentrations by 1995 . This predicted reduction is the result is due to the effect of ongoing state and federal emissions control programs for motor vehicles. The beneficial effect of vehicle emissions programs would offset the adverse effect of increased traffic volume through the year 1995.

MITIGATION

Project Construction

To reduce the potentially significant, temporary effect on local PM₁₀ concentrations due to project construction, the following dust abatement measurements could be required as conditions of project approval. The potential effects of fugitive dust would then be reduced to a level of insignificance.

- The construction contractor should sprinkle unpaved areas with water as necessary to reduce fugitive dust emissions by approximately 50%.
- The construction contractor should promptly sweep up dirt and debris spilled onto paved surfaces to reduce resuspension of dust through vehicle movement over these surfaces.
- The construction contractor should cover haul trucks to reduce spillage onto paved surfaces.
- The construction manager should designate a person or persons who would oversee the implementation of the entire dust abatement program and would also order increased watering when necessary.

Operation

To reduce the CO emissions in the project area and alleviate traffic congestion during events at the Coliseum, implementation of programs to provide or promote the following may be required of the developer and local agencies.

- Continued and intensified use of transit for Coliseum events, particularly use of express buses and regional park / ride lots, as identified as a transportation mitigation measure (p. 97). Those measures would reduce peak vehicle-trips increased with a project for a sell-out football event from 20% without increased transit, to about 6%.

NOTES - Air Quality

- /1/ California Air Resources Board, 1984, California Surface Wind Climatology.
- /2/ California Air Resources Board, October 7, 1985, "Attainment/ Non-Attainment Status," memorandum.
- /3/ Bay Area Air Quality Management District, 1987, Air Quality Handbook, 1987-1988.
- /4/ Bay Area Air Quality Management District, August 1987, Emissions Inventory Summary Report.
- /5/ Bay Area Air Quality Management District, November 1985, Air Quality and Urban Development Guidelines for Assessing Impacts of Projects and Plans.

D. NOISE

Environmental noise is usually measured in A-weighted decibels (dBA)./1/ In general, people can perceive a three-decibel difference in sound levels; a difference of 10 dBA is perceived as a doubling of loudness. Some representative sounds and sound pressure levels are shown in Table 27. Environmental noise levels typically fluctuate over time, and different types of noise descriptors are used to account for this variability. Useful noise descriptors measure time-averaged noise levels; these descriptors include L_{eq} , L_{dn} , and CNEL./2, 3, 4/ Both CNEL and L_{dn} noise descriptors are commonly used in establishing community noise compatibility guidelines for specific land uses.

SETTING

Existing Noise Sources and Sound Levels

Major noise sources in the Coliseum area include vehicular traffic, aircraft, the Southern Pacific Railroad, and noise from local industrial operations. Scheduled activities at the Coliseum Complex generate land and air traffic noise, and noise associated with the Coliseum activities (baseball or football games and rock concerts). Noise levels were measured at the Coliseum Complex during a sell-out baseball game on October 4, 1989, as shown on Table 28 and Figure 29. Traffic noise was measured at the intersections of 66th and San Leandro (Site 2 on Figure 29) 66th and Coliseum, and along Coliseum Way south (Site 6). Attenuation of noise from the

TABLE 27: REPRESENTATIVE SOUNDS AND SOUND PRESSURE LEVELS

<u>Sound Source</u>	<u>Sound Pressure Level (dBA)</u>
Jet take-off Riveting	120-130
Sonic Boom Amplified Music	100-120
Unmuffled Truck Busy Street Noise	80-100
Noisy Office Average Radio	60-80
Noisy Home Average Conversation	40-60
Whisper Human Breathing	10-20

SOURCE: C. Lawrence Cornett and Charles E. Hina, 1979, Methods for Predicting Noise and Vibration Impacts, U.S. Department of Transportation, Transportation Systems Center.

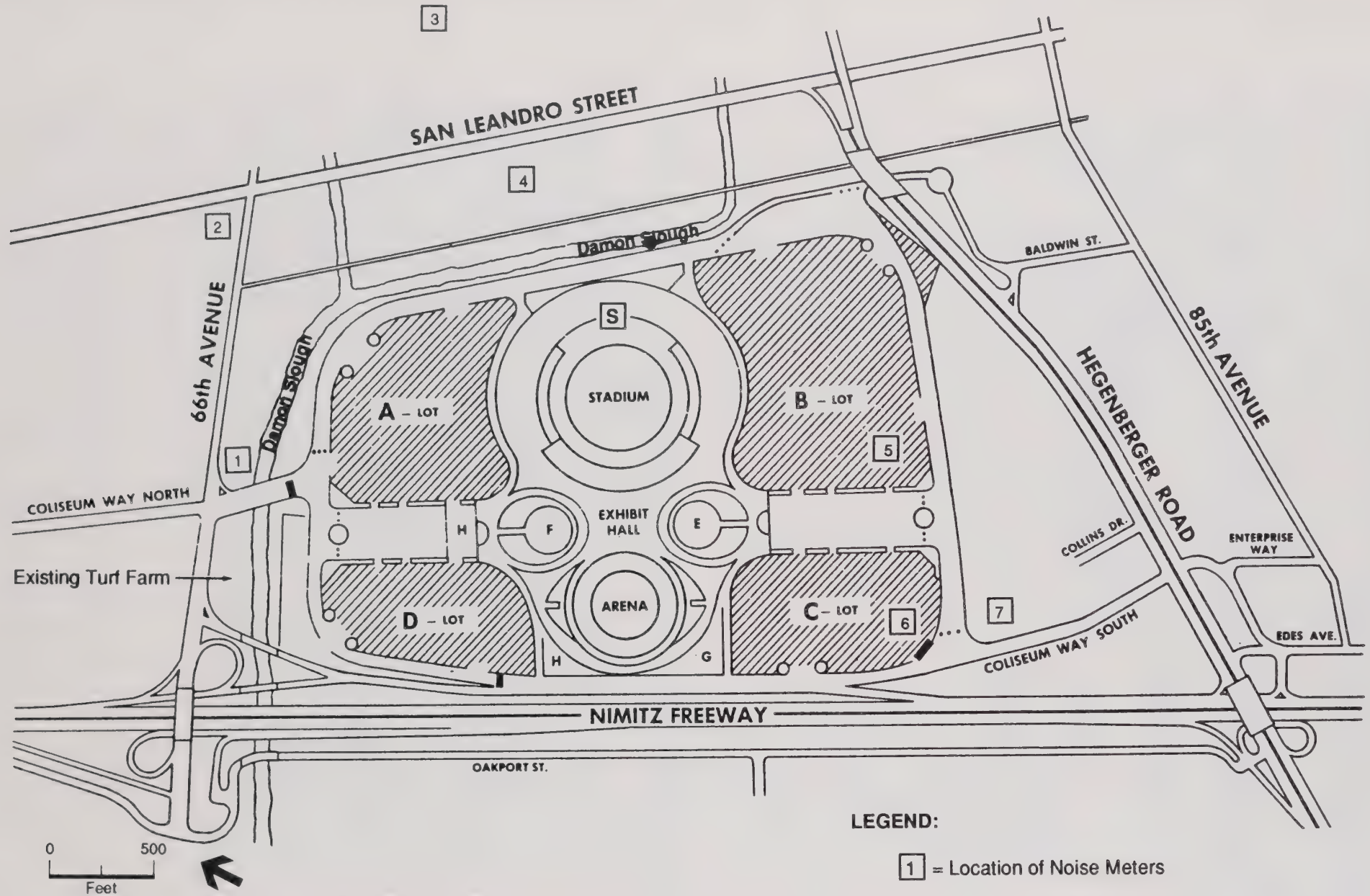
Stadium can be determined by the difference between measured average noise levels just outside the eastern edge of the Stadium and the measured average noise levels at three locations further from the Stadium. For the purpose of establishing the attenuation, two measurements were taken to the east of the Stadium; one at the rear of the residence at 861 71st Street (Site 3), about 1,200 feet from the eastern edge of the Stadium site(s), and one at the rear of 7217 San Leandro Street (Site 4), approximately 600 feet from the eastern edge at the Stadium (Site 5); the third measurement was taken in Coliseum parking lot B about 600 feet south of the Stadium (Site 5). A 24-hour noise measurement was taken at the property line of the residence at Site 3 to establish the day-night average noise level (L_{dn}) for the residential area closest to the project.

The differences between simultaneous measurements of average sound levels at the Stadium's eastern edge (Table 28 and Figure 29) and the sites on 71st Street (Site 3) and San Leandro Street (Site 4) were 10 and 11 dBA L_{eq} , respectively. Stadium noise was muted and the dominant noise was from aircraft flying advertisements over the

TABLE 28: NOISE MEASURED DURING BASEBALL GAME, dBA /a/

	Sound Level during event			Simultaneous Sound Level within Stadium /b/			No-Event Sound Level at 71st Avenue /e/
	<u>L_{eq}</u>	<u>L₁₀</u>	<u>L_{max}</u>	<u>L_{eq}</u>	<u>L₁₀</u>	<u>L_{max}</u>	<u>L_{eq}</u>
1. 66th Street/ Coliseum Way /c/	77	78	95				
2. 66th Avenue/ San Leandro /c/ Street	73	75	86				
3. 861 71st Avenue (residence) /d/	64	67	72	74	75	88	59
4. 7217 San Leandro Street (rear)	64	65	78	74	76	85	
5. B-lot Parking	61	65	71	74	78	89	
6. C-Parking near Coliseum Way /b/	69	74	78				

- /a/ Environmental noise is measured in units of decibels (dB), which is a logarithmic scale. The dBA, or A-weighted decibel, refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. The normal range of human hearing extends from about three dBA to about 140 dBA. A 10-dBA increase in the level of a continuous noise represents a perceived doubling of loudness, a two dBA increase is barely noticeable to most people.
- /b/ Noise levels measured within Stadium at same time measurements were taken at three exterior locations (71st Avenue, San Leandro Street, and B-lot Parking), to determine noise attenuation outside the Stadium.
- /c/ Traffic Noise measurements were taken on October 4, 1989, immediately after an American League playoff game, at about 4:00 p.m., during peak traffic, with a Metrosonics, Inc. (dB-308A) Metrologger which was calibrated before and after each measurement period.
- /d/ Noise measurements were taken between 11:30 a.m. and 1:30 p.m. in the afternoon on October 4, 1989, during an American League playoff game.
- /e/ Average noise measurement at same time of day with no event at Coliseum. October 17, 1989.



Stadium during the baseball game, BART trains, passing automobiles, and occasional southern Pacific Railroad activity. The difference between the simultaneous average noise levels at the eastern edge of the Stadium and at Lot-B (Site 5) was 13 dBA L_{eq} . The greater attenuation in this direction as opposed to attenuation to the east, is partially due to the Stadium's Third Deck, which does not fully enclose the eastern side of the Stadium. Traffic generated noise was measured as a baseball game let out. Noise levels were 77, 73, and 69 dBA L_{eq} , at sites 1, 2, and 6, respectively.

NOISE REGULATIONS, PLANS, AND POLICIES

In general, noise levels in Oakland are subject to Oakland Municipal Code, Chapter 3, Article 1 which limits any noise occurring between 9:00 p.m. and 7:00 a.m., that is perceived to be "raucous," and that does not have city permission. Oakland refers to the California Department of Health Service's/U.S. Department of Housing and Urban Development's (HUD) Land Use Compatibility Guidelines for planning policy.^{5/} The guidelines were created with aircraft noise in mind, but have relevance in other purposes (see Table 29).

SENSITIVE RECEPTORS

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include; interference with sleep, concentration, and communication, physiological and psychological stress, and hearing loss. At a distance of about five feet, the average sound level of speech is typically about 60 to 65 dBA. In general, background noise begins to interfere with a listener's understanding of speech when it exceeds 55 to 60 dBA. Sleep can be disturbed when interior noise levels exceed 40 to 50 dBA.

Some land uses are more sensitive to ambient noise levels than others. Sensitivity depends on the amount of noise exposure (in terms of both exposure time and insulation from noise) and the sources of the noises involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, parks and outdoor recreation areas are generally more sensitive to noise than are commercial and industrial land uses. Land use compatibility guidelines such as those shown in Table 29 provide guidance in noise matters. Land uses to the north, south, and west of the project site are mostly industrial, and relatively insensitive to noise levels at the

<u>Land Use Category</u>	Community Noise Exposure (Ldn or CNEL)						
	55	60	65	70	75	80	85
Residential: Low-Density Single-Family, Duplex, Mobile Homes	—	• • • • •	• • • • •	• • • • •	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■
Residential: Multi-Family	—	• • • • •	• • • • •	• • • • •	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■
Transient Lodging: Motels, Hotels	—	• • • • •	• • • • •	• • • • •	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■
Schools, Libraries, Churches, Hospitals, Nursing Homes	—	• • • • •	• • • • •	• • • • •	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■
Auditoriums, Concert Halls, Amphitheatres	• • • • •	• • • • •	• • • • •	• • • • •	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■
Sports Arena, Outdoor Spectator Sports	• • • • •	• • • • •	• • • • •	• • • • •	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■
Playgrounds, Neighborhood Parks	—	—	—	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■
Golf Courses, Riding Stables, Water Recreation, Cemeteries	—	—	—	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■
Office Buildings, Business - Commercial and Professional	—	—	—	• • • • •	• • • • •	■ ■ ■ ■ ■	■ ■ ■ ■ ■
Industrial, Manufacturing, Utilities, Agriculture	—	—	—	• • • • •	• • • • •	■ ■ ■ ■ ■	■ ■ ■ ■ ■

Explanation of Land Use Consequences:

- — **Normally Acceptable:** Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
- • • **Conditionally Acceptable:** New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.
- ■ ■ **Normally Unacceptable:** New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
- ■ ■ **Clearly Unacceptable:** New construction or development should generally not be undertaken.

SOURCE: California Department of Health Services, 1987,
Guidelines for the Preparation and Content of
the Noise Element of the General Plan.

TABLE 29
STATE LAND USE COMPATIBILITY GUIDELINES
FOR EXTERIOR COMMUNITY NOISE

project site. About one quarter-mile east of the Coliseum Complex, the land use is residential and is considered more sensitive to noise levels. The nearby sensitive receptors are the homes east of the BART right of way approximately 1,200 feet east of the project site.

An L_{dn} was established for a nearby residential receptor after taking a 24-hour noise measurement at 861 71st Street (Site 3). The L_{dn} was found to be 65.5 dBA, a level which is marginally unacceptable for residential use under the HUD guidelines (see Table 29).

IMPACTS

Construction Noise

The project would generate intermittent, intrusive noise during construction, on-site and along truck routes. Table 30 lists typical noise levels for powered equipment such as tractors, graders, trucks, cranes, concrete mixers, and pile drivers./6,7/

A 33-foot high berm encloses the eastern side of the Stadium. The berm would act as a shield against noise emissions for most Stadium expansion activity. Construction activity at the Plaza site of proposed office/restaurant space between the Stadium and Arena would be also shielded by virtue of the Stadium which acts as a barrier for nearby sensitive receptors. Assuming that Stadium noise would be attenuated at the rate of 4.5 decibels per doubling of distance from the source, and assuming a 10 decibel reduction for shielding, the noise level attributable to general construction activity would be between 65 and 58 dBA L_{eq} for distances of 400 to 1600 feet from the source, respectively. If pile-driving were necessary, the noise for this activity would range from 70 to 81 dBA over the same distances. Noise levels in buildings or residences with doors and windows closed would be reduced by an additional 10 to 20 dBA./8/ Noise levels from construction of the Hall of Fame would depend on its location. The same 4.5 decibel reduction per doubling of distance would be assumed.

Operational Noise

Sport events are anticipated to continue to be the primary use once expansion of the Stadium is complete. Average baseball and rock concert attendance would be similar to existing average attendance figures. Historically, football attendance has been near

TABLE 30: TYPICAL COMMERCIAL/INDUSTRIAL CONSTRUCTION NOISE LEVELS (DISTANCE AT 50 FEET)

<u>Construction Phase</u>	<u>Noise Level, dBA (Leq)</u>
Ground clearing and grading	84
Excavation	89
Foundations	78
Erection	85
Finishing	89
Pile Driving	105 /a/

/a/ Peak level at pile driver impact.

SOURCES: Bolt, Beranek, and Newman, 1971, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, U.S. Environmental Protection Agency.

Stadium capacity. Based on the assumption that the only change in the noise environment would be an addition of 12,000 people, the noise emitted by the crowd for a sold-out football game at the Stadium would be increased by about one decibel and would have a negligible impact. Additions to the Stadium would change the way the noise was distributed from the Stadium, particularly along the eastern side. For the most part the addition would attenuate the sound from the Stadium.

While no increase of traffic noise level would be expected as a result of Stadium expansion, the higher attendance levels for a sold-out football or baseball event would extend the time period during which Stadium-related traffic noise would occur. For football, this would occur up to 11 times per season (eight home games, plus three potential playoff games).

The use of aircraft for advertising purposes creates an elevated noise level which lasts throughout certain events at the Coliseum. The noise level measured at the sensitive receptor on 71st Avenue is representative of noise at other homes located at even greater distances from the Coliseum. Blimp noise was noted to range from 55 to 61 dBA. Small advertising aircraft noise was measured as high as 71 dBA

outside the 71st Avenue residence (Site 3). Noise levels due to aircraft would rise and fall as the aircraft circle the Coliseum. This kind of noise can be annoying, especially on Sundays or in the evening.

MITIGATION

Identified in this report:

- Breakers and jackhammers could be equipped with noise reducing shields or shrouds.
- Holes for piles could be predrilled to reduce level and duration of noise impacts from pile driving.
- The general contractor could construct solid barriers to shield receivers from construction noise source. This measure would reduce construction noise by up to 5 dBA.
- Abolish advertising aircraft or restrict flight paths to limit aircraft noise over residential areas.

NOTES - Noise

- /1/ A decibel (dB is a logarithmic unit of sound energy intensity. Sound waves, travelling outward from a source, exert a sound pressure level (commonly called "sound level") measured in decibels. A dBA is a decibel corrected for the variation in frequency response of the typical human ear at commonly encountered noise levels.
- /2/ L_{eq} is the equivalent steady-state sound level which, in a stated period, would contain the same acoustic energy as the time-varying sound level during the same period. L_{10} is the sound level exceeded 10% of the time.
- /3/ L_{dn} , the day-night average noise level, is based upon the human reaction to cumulative noise exposure over 24-hour period, which takes into account the greater annoyance of nighttime noises. A 10-dBA "penalty" is added to noise occurring between 10 p.m. and 7 a.m.
- /4/ CNEL, the community noise equivalent level, is a noise measure based on human reaction to cumulative noise exposure over a 24-hour period, which takes into account the greater annoyance of nighttime noises. Noise (measured as L_{eq}) occurring between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise; noise between 7 p.m. and 10 p.m. is weighted five dBA higher.
- /5/ Willy Yee, Associate Planner, City of Oakland, telephone conversation, October 12, 1989.
- /6/ Intrusive noise refers to infrequent noise that intrudes over and above background noise levels for a short period.

- /7/ Bolt, Beranek, and Newman, 1971, "Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances." Noise levels estimated for different phases of construction correspond to a situation where the noisiest piece of equipment is located at 50 feet from the observer with the other construction equipment located at a distance of 200 feet. Minimum required equipment assumed to be present at the site.
- /8/ With windows open, buildings reduce noise from outside sources about ten dBA; with windows closed, light frame buildings reduce noise from outside sources by about 20 dBA (U.S. Department of Transportation, FHWA Policy and Procedure Memorandum 90-2, February 8, 1973).

E. WETLANDS ISSUES

SETTING

Hall of Fame

The proposed site for the Hall of Fame is located at Damon Slough, a flood control channel, at the northern edge of the Oakland Coliseum parking area (see Figure 2). North of the proposed site are a turf farm (used for replacing the turf at the Coliseum) and 66th Avenue; east of the site are a bridge across Damon Slough connecting 66th Avenue to the Coliseum parking area, and the upstream portions of Damon Slough. To the south is the Coliseum parking area; and to the west is the I-880 bridge across Damon Slough.

Damon Slough is an east-west running, and tidal, flood-control channel, maintained by the Alameda County Flood Control and Water Conservation District. It receives water from the watersheds of Lion and Arroyo Viejo Creeks, an approximately 10-square-mile catchment. Near the Coliseum, the slough flows along the east and north sides of the parking area. The channel has been designed to contain a 100-year flood event and it flows into San Francisco Bay about 2000 feet downstream of the Coliseum Complex./1/ The District would have review jurisdiction over any structure over the channel.

The slough is an earthen-banked channel with a muddy bottom of undetermined depth. Both north and south sides of the slough are fringed with wetland habitat./2/ The habitat is dominated by cordgrass (*Spartin* sp.) and ranges in width from approximately five feet to 20 feet. From the cordgrass to the top of the bank (approximately five feet),

upland vegetation dominates. Litter (papers, plastic bags, cans, bottles, tires) is common throughout the slough. During the September 1989 survey, killdeer, a shorebird species, were observed using the slough habitat. Large bird traces at the waters edge indicate that the slough is used by large wading birds such as the common egret or great blue heron. Other birds expected to use the habitat include black crowned night heron and snowy egret. Species expected to use the water and mud environments of the slough include jack smelt (Atherinops affinis), top smelt (Athineropsis Californiesis), small sharks and rays, shrimp, crabs and clams. No species listed as threatened, rare or endangered by federal or state agencies are expected to inhabit the slough./3/ Overall, the habitat value of the slough would be considered degraded and limited.

Damon Slough falls under the jurisdiction of several federal and state regulatory and permitting agencies including the U.S. Army Corps of Engineers (COE), U.S. Environmental Protection Agency (EPA), San Francisco Bay Regional Water Quality Control Board and San Francisco Bay Conservation and Development Commission (BCDC)./4,5,6,7/ As noted on pp. --, Plans, Policies and Approval Process, the Corps of Engineers would review development near or on Damon Slough through the Section 404 permit process, and the BCDC would require a permit for dredging or fill in the tidal waters of the slough, and land use changes within 100 feet of the shoreline. The other agencies listed above would review and comment to the Corps or BCDC on proposal activities. Several wildlife agencies (U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Game) have concerns in this slough and would comment to the regulatory agencies noted above./8,9,10,11/

Practice Fields

The proposed expanded practice fields and training facility would be an expansion of an existing 6.5-acre site at the northernmost corner of North Field at Metropolitan Oakland International Airport (MOIA), operated by the Port of Oakland (see Figure 30). The facility is on an approximately 19-acre area that is bordered on the north by Doolittle Drive and San Leandro Bay, on the east by Earhart Road and Fan Marsh, on the south by the airport, and on the west by Harbor Bay Parkway and Bay Farm Island.

Between the north side of the practice fields and Doolittle Drive is a drainage ditch and a narrow fringing pickleweed (*Salicornia* sp.) marsh (see Figure 30). This ditch is about 800 feet long and runs from Harbor Bay Parkway on the west, to Earhart Drive on the east. The western half of the ditch is about 15-feet wide and the eastern half is broader (about 75 to 100 feet wide). The eastern half contains several small channels and is densely vegetated with pickleweed. The salt marsh harvest mouse, a species listed as endangered by federal and state agencies, is expected to be present in Fan Marsh. The harvest mouse would not be expected to inhabit the ditch wetland near the practice fields, because of the limited size and relative isolation of that wetland, and no other rare or endangered species are expected to be present near the practice fields. However, the potential presence of a listed species (the harvest mouse) means that wildlife agencies would have jurisdiction to review the project. Four culverts are located in the drainage ditch. Three culverts (two under Doolittle Drive and one under Harbor Bay Parkway) allow runoff to enter the ditch. All three culverts have flapgates on the ditch side so that the flow of water is into the ditch and not toward the Bay. The fourth culvert is at the east end of the ditch, under Earhart Road, and connects the ditch to Fan Marsh. The flow of water through this culvert is out of the ditch and into Fan Marsh. A flap gate on the Fan Marsh side prevents tidal water from entering the drainage ditch. A part of this ditch-and-fringing-wetland system at the practice fields is potentially under the jurisdiction of the Corps of Engineers.

IMPACTS

Hall of Fame

The Hall of Fame, if built over Damon Slough, would shade the environment in the same way as a bridge. The effect of this shading would be a loss of vegetation and a consequent loss of habitat value. The Hall of Fame, if built over the slough itself, would be considered fill by the San Francisco Bay Conservation and Development Commission (BCDC).^{6/} Additionally, any support structures in the stream bed or in the lower part of the slough bank that supports wetland vegetation would constitute fill subject to regulations of the Corps of Engineers.^{3/} Fill in the stream or wetlands would result in a loss of wetland acreage and a loss of habitat value. Because of the degraded nature of the slough habitat and small area that would be shaded by the Hall of Fame structure, the effects of the project would be considered limited.

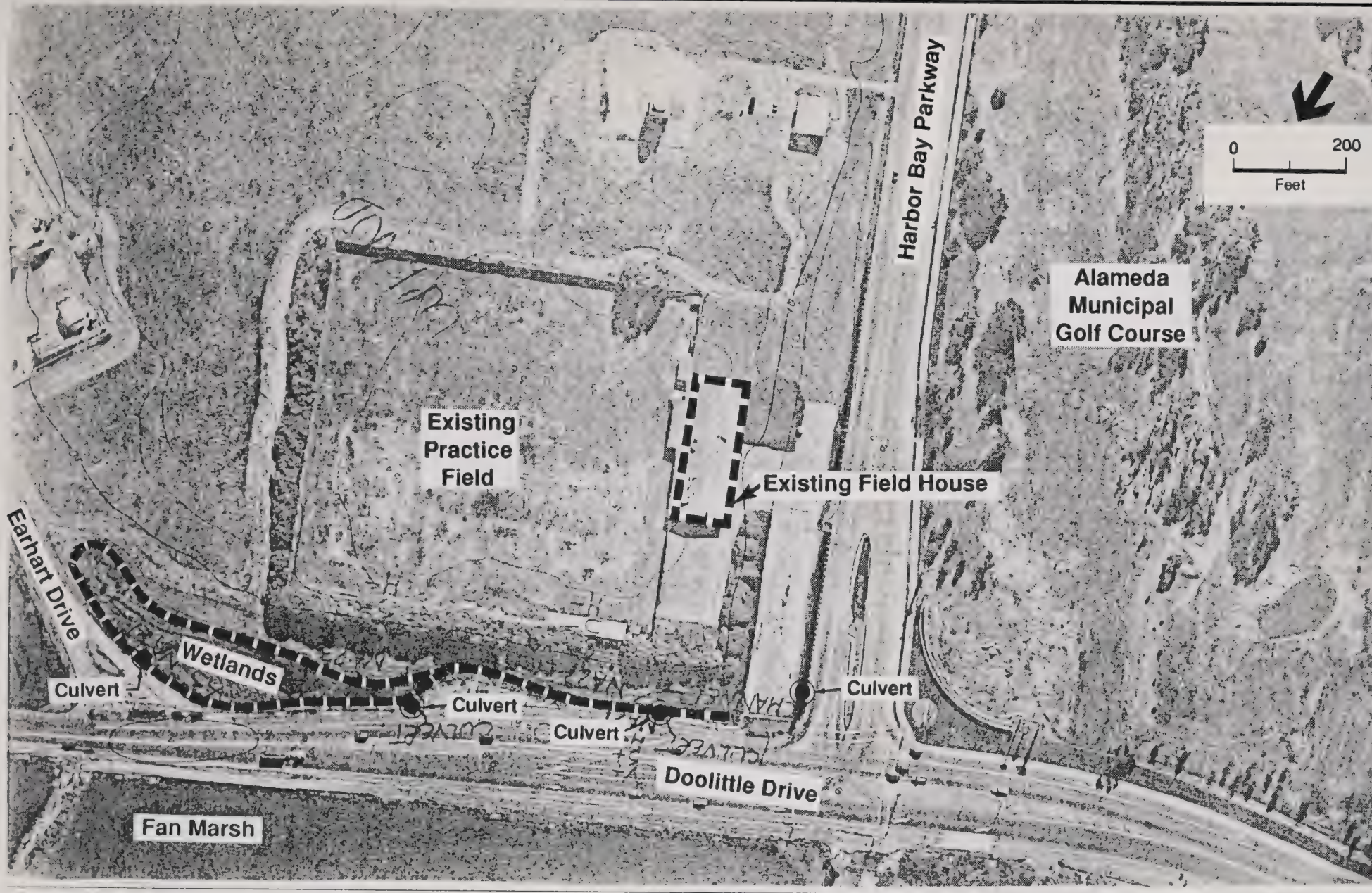


FIGURE 30
WETLANDS IN VICINITY OF PRACTICE FIELDS

During construction the possibility exists that construction materials (nails, wood scraps, glass, metal strips, etc.) would fall into the slough and decrease the value of the habitat.

Practice Fields

Expanding the practice fields to the east, as proposed, would include the placement of fill in approximately 0.13 acre of a wetland that is potentially under the jurisdiction of the Corps of Engineers. The placement of this fill would result in a loss of wetland acreage and block the culvert that drains the wetland into Fan Marsh. The loss of that area would not be considered a substantial effect, because of the limited size of the ditch wetland, and would not have a major effect on wetlands on a regional basis.

The proposed expansion would encroach into the 100-foot shoreline band around Fan Marsh that is under the jurisdiction of BCDC, and the project would require permit review by BCDC.

MITIGATION

The policy of regulatory agencies involved with wetland and Bay protection, including the U.S. Army Corps of Engineers, Environmental Protection Agency, U.S. Fish and Wildlife Service, San Francisco Bay Conservation and Development Commission, California Department of Fish and Game is "no net loss of wetland acreage or habitat value."/^{3,4} "Net loss" means wetland acreage affected that is not replaced. Thus, mitigation for such potential loss of wetland acreage would be for the project to provide at least one acre of in-kind, on-site wetland habitat for every acre affected. If a proposed mitigation wetland is not on-site or is not in-kind, the amount of required wetland habitat could increase from a 1:1 ratio to as much as 4 or 5:1. The increase would depend on how far the new wetland habitat site is from the impact site, what type of habitat is proposed and how long it would take for the new wetland habitat to become useful to wildlife. BCDC would also require mitigation to provide public access to the shoreline.

Hall of Fame

For the proposed Hall of Fame, mitigation for lost habitat in Damon Slough would be the creation of a similar habitat in the general area of San Leandro Bay. Creation of

similar wetland within the Coliseum domplex area itself, such as by conversion of the turf farm or part of the parking lot would not appear appropriate. The restoration or enhancement of another degraded tidal channel might be acceptable to the agencies, although these types of mitigation might require more than an acre of mitigation for each acre affected.

To build a structure over navigable waters, a Section 10 (Rivers and Harbors Act) permit must be obtained from the COE. Conditions of the permit would address the protection of the waterway during the construction phases. A requirement might be the placement of a net, or similar device under the construction area to catch any falling debris.

Practice Fields

The mitigation considerations for the Hall of Fame impacts would apply to the practice fields. Additionally, the existing culvert (from the wetland to Fan Marsh) that would be blocked by construction of the practice fields should be lengthened to allow it to continue to function as drainage from the practice field area into Fan Marsh and to maintain the hydraulic connection between the ditch and the marsh.

NOTES - Wetland Issues

- /1/ Kelvin Hickenbottom, Civil Engineer, Alameda County Flood Control and Water Conservation District, telephone conversation, September 25, 1989.
- /2/ Survey by Environmental Science Associates, Inc., September 10, 1989.
- /3/ Robert Tasto, Wildlife Biologist, California Department of Fish and Game (Menlo Park), telephone conversation, September 28, 1989.
- /4/ Sharon Moreland, Regulatory Branch San Francisco District, U.S. Army Corps of Engineers, telephone conversation, September 25, 1989.
- /5/ Robert Leidy, Permits Coordinator, Environmental Protection Agency, telephone conversation, September 27, 1989.
- /6/ Michael Carlin, Environmental Specialist, San Francisco Bay Regional Water Quality Control Board, telephone conversation, September 28, 1989.
- /7/ Diane Pinney, Permit Analyst, San Francisco Bay Conservation and Development Commission, telephone Conversation, September 25, 1989.

- /8/ Michael Long, Wildlife Biologist, U.S. Fish and Wildlife Service, telephone conversation, September 21, 1989.
- /9/ Diane Windham, Wildlife Biologist, National Marine Fisheries Service, telephone Conversation, September 25, 1989.
- /10/ Terry Palmisano, Wildlife Biologist, California Department of Fish and Game, telephone conversation, September 27, 1989.
- /11/ Frank Grey, Wildlife Biologist, California Department of Fish and Game, telephone conversation, September 28, 1989.

F. PUBLIC SERVICES

FIRE PROTECTION /1,2/

Setting

The Oakland Fire Department provides fire protection services to the Oakland Coliseum and the surrounding area from Engine 29 (Fire Station 29) at 1016 66th Avenue. The Oakland Fire Department currently has an emergency response time of three minutes, giving the Department a Class 2-A response rating, the highest rating possible. Emergency response time to the Coliseum and Arena complex from Station 29 is currently 1.5 minutes. Secondary response is provided by Station 27 at 8501 Pardee Drive. Station 27 has a current response time of three minutes to the Coliseum Complex.

Coliseum incidents warranting response from the Oakland Fire Department have included: automobile accidents and fires, bodily assaults, and minor emergency medical situations; the department typically responds to six to 12 calls per year at the Coliseum. Persons requiring hospital care are transported via Allied Ambulance Service. The Oakland Fire Department does not mobilize any fire trucks for Coliseum events.

Impact

The Oakland Fire Department anticipates a minimal increase in demand for fire services as a result of the Coliseum expansion. Operation would result in an increase in fan population and traffic congestion in the Coliseum vicinity. The increased fan population could increase the demand for fire protection service calls, particularly for

assistance related to personal injury and/or auto accidents. The Fire Department does not anticipate a need for additional personnel or equipment as a result of any increase in calls for service due to the proposed project. The Fire Department does not foresee an increase in emergency response time as a result of the expansion. This is due to Station 29's proximity to the Coliseum Complex and the use of traffic officers at key intersections during Coliseum events. However, the Fire Department has indicated that concurrent events in both the expanded Coliseum and the Arena would increase response time.

Since project construction would take place on a self-contained site, the Fire Department does not anticipate any delays in service to the surrounding area due to street closures or other construction interruptions.

Mitigation

Identified in this report:

- The expansion plans should be reviewed and approved by the Oakland Fire Department as part of the project approval process, to ensure that access is available for emergency response services.
- The Oakland Police Department should assign additional staffing for traffic circulation when simultaneous events take place in the Coliseum and Arena to expedite response for emergency vehicles.

POLICE PROTECTION /3,4,5/

Setting

The Oakland Police Department provides preventive patrol and emergency response services 24-hours a day from the Hall of Justice, at 455 Seventh Street at Broadway, in downtown Oakland. The Department's Patrol Division operates in five separate districts within the City. The Oakland Coliseum and Sports Arena are in District 4.

The Oakland Police Department mobilizes about 24 police officers from various Divisions for Coliseum events; included are 18 officers for traffic flow and 4 to 6 officers for scalping detail. Currently, the Police Department typically responds to about eight incidents at a sold-out baseball game at the Stadium. Within the Coliseum,

the services of a private security company (Alameda County Security) are used. In addition, the Coliseum has a staff of ushers to complement security. Major Coliseum events require 170 security officers and 120 ushers.

Impact

The Oakland Police Department anticipates an increase in demand for police services resulting from proposed expansion of the Stadium, which would result in an increase in fan population and traffic congestion in the Coliseum vicinity. At the sold-out Los Angeles Raiders exhibition game on August 26, 1989, the Police Department responded to about 40 incidents at the Stadium, compared to about eight for a sold-out baseball game. For sold-out football games at the expanded Stadium, the department expects to need to assign an additional 10-12 officers above the 28 to 30 now mobilized for Coliseum events. Those officers would provide increased services for traffic circulation control, site security, and crime suppression, including calls related to increased Stadium patron parking on streets near the Coliseum./3/ The increased deployment of police staff would increase overtime salary costs borne by the Police Department.

The Oakland Coliseum uses the services of a private security company and a full staff of ushers. Expansion of the Coliseum by 12,000 seats, would require a total of 50 additional security officers and ushers.

The Department anticipates an increase of one to two minutes in emergency response time to surrounding adjacent areas due to additional vehicle movement. Traffic officers at key intersections would play a major role in assisting emergency vehicles through congestion.

Mitigation

Identified by the Oakland Police Department:

- Increase Police Department personnel assigned to the Stadium by 10-12 officers per sold-out event; the costs of those additional services could be reimbursed through an agreement between the Coliseum and the Police Department. Currently, the Coliseum reimburses the City \$15,000 for police services, which does not reflect costs of increased service that would be required by the project./3/

WATER SUPPLY /6,7,8/

Setting

The East Bay Municipal Utility District (EBMUD) provides domestic water supply to the City of Oakland. Water supply for the City originates in the Sierra Nevada mountains, and is initially stored at the Pardee Reservoir on the Mokelumne River. The Pardee Reservoir has a capacity of 209,900-acre-feet of water. EBMUD distributes domestic water to the Oakland Coliseum and vicinity via the infrastructure of the Central Zone.

Water supply is distributed to the Oakland Coliseum via a series of subsurface distribution lines. A twelve-inch diameter pipeline runs underneath Oakport Avenue connecting with a twelve-inch diameter pipeline that runs under the Nimitz Freeway to the Arena's west end. An eight-inch diameter pipeline provides direct service to the Coliseum. Also serving the Coliseum is an eight-inch diameter pipeline underneath 73rd Avenue.

Impact

Operation of the proposed project would result in an estimated demand for about 540,000 gallons of water per game /8/. According to EBMUD, the existing lines serving the Coliseum would accommodate the expansion, and the Central Zone, which supplies the Coliseum, has the capacity to meet the project's demands.

Mitigation

Identified in this report:

Recommendations of the State Department of Water Resources for reducing water consumption, and thereby reducing generation of wastewater, include:

- Supply line pressure: water pressure greater than 50 lbs per square inch (psi) can be reduced to 50 psi or less by means of a pressure-reducing valve.
- Drinking foundations: drinking fountains should be equipped with self-closing valves.

- Ultra-low-flush toilets: install one-and-one-half gallon per flush toilets in all new construction.

SANITARY SEWER /6,9,10/

Setting

The City of Oakland maintains and operates the subsurface sanitary sewer system which carries wastewater from the Coliseum vicinity to wastewater treatment facilities operated by EBMUD. EBMUD's Special Sewage Treatment Utilities District No. 1 (SDI) was established in 1944 to provide treatment and disposal of sanitary and industrial wastewater. The upgrading of the SDI Water Pollution Control treatment plant in 1977 resulted in a capacity for primary treatment of 290 million gallons per day (mgd), and secondary treatment capacity of 168 mgd. Actual recent treatment flows from Oakland, Alameda, Berkeley, El Cerrito, Emeryville, Kensington, Piedmont, and Richmond Annex combined have averaged about 80 mgd of dry weather flow. Peak wet weather treatment flows from these sources have exceeded the 290 mgd treatment capacity.

The City of Oakland, in cooperation with other East Bay communities which discharge sewage into EBMUD's treatment facilities, has completed a study of tactics for reducing or eliminating stormwater inflow into the wastewater system. The study recommendations include strategies for reduction of inflow from normal sewage disposal in Oakland. Construction of the 20-year program for implementing improvements to existing sewage systems in Oakland began about two years ago.

The wastewater treated at the SDI treatment plant meets federal and state regulations regarding wastewater quality and disposal. Treated effluent is discharged from the treatment plant into the Bay near Yerba Buena Island via a three-mile-long outfall line. The outfall is gravity-fed, except during high tide and/or high flow, when the outfall is pumped into the Bay.

Wastewater generated by the Coliseum is collected via an eight-inch diameter collection main connecting to a 63-inch diameter interceptor that runs between the Oakland Coliseum and Arena.

Impact

Operation of the project would generate an estimated 490,000 gallons per game of wastewater flow into the SDI No. 1 treatment facility. The existing sewage mains serving the facility are capable of accommodating project generated wastewater.

Mitigation

See measures identified for water supply.

SOLID WASTE /11,12/

Setting

The Oakland Scavenger Company, under contract with the City of Oakland, provides solid waste disposal service for all of the City of Oakland. The company's service area also encompasses most of Alameda County, and thereby serves a total population of approximately 1,000,000.

The Oakland Scavenger Company transports solid waste from the County to two landfill sites. The site at Durham Road in Fremont receives wastes from the southern portion of the County; solid waste from the northern portion of the County, including the Oakland Coliseum, is deposited at Altamont. Solid waste is transported from the City of Oakland to the Davis Street Transfer Station in San Leandro, and from there to the 1,600-acre landfill site at Altamont, about 33 miles southeast of Oakland. The Altamont site is owned by the Oakland Scavenger Company, and has an estimated remaining lifetime of 40 to 50 years. Approximately 3,500 tons of solid refuse per day is currently hauled by Oakland Scavenger Company from northern Alameda County to the Altamont site. The amount of solid waste collected county-wide and hauled to the landfill sites is projected to increase by between about two and three percent (70-105 tons) per year.

The Oakland Coliseum uses a staff of approximately 75 to clear the facility of event-generated solid wastes.

Impact

The project would generate an estimated 115,000 pounds per game of solid waste./13/ Solid waste generated by project operations is not anticipated to include any hazardous materials. Oakland Scavenger Company has stated that operation of the proposed project would not significantly affect solid waste disposal services in Oakland, nor would it affect the estimated lifetime of the Altamont Landfill site.

The Oakland Coliseum estimates that six more maintenance personnel would be needed to remove the additional solid waste generated by project operations.

Mitigation

None required.

NOTES - Public Services

- /1/ Jerry Blueford, Fire Marshal, Oakland Fire Department, meeting, September 15, 1988.
- /2/ Mike Kelly, Captain, Oakland Fire Department, telephone conversation, September 19, 1988.
- /3/ Captain James Cooper, Oakland Police Department, telephone conversations September 21, 1989 and December 11, 1989, and letter, December 6, 1989.
- /4/ Sergeant Bill Macfarland, Oakland Police Department, telephone conversation September 26, 1989.
- /5/ Phil DeCarlo, Assistant General Manager, Oakland Coliseum, telephone conversation September 21, 1989.
- /6/ Leo O'Brien, Senior Civil Engineer, East Bay Municipal Utility District, telephone conversations September 26 and 27, 1989
- /7/ John Chong, Civil Engineering Assistant, East Bay Municipal Utility District, telephone conversation September 27, 1989
- /8/ Water demanded (64,200 fans X 4.5 gallons - sanitary purposes) + (125,000 gallons - hose down Stadium after games) + (42,400 gallons - food services, preparation and cleanup, Frank Morris, Director of Maintenance, Oakland Coliseum, telephone conversation, October 2, 1989) + (84,000 gallons - amount required weekly for field) = 540,300.
- /9/ Gus Amirzehni, Engineer, Oakland Department of Public Works, Engineering Design, telephone conversation September 27, 1989

- /10/ Wastewater generation estimates are based on 90% of the estimated water supply demand.
- /11/ Victor Macias, Supervisor of Maintenance Operations, Oakland Coliseum, telephone conversation, September 26, 1989
- /12/ Michael Crosetti, Manager, Oakland Scavenger Company, telephone conversation, September 16, 1989
- /13/ 11.5 tons of solid waste per 40 cubic yards; games generate 200 cubic yards. Richard Pasquini, Division Manager, Oakland Scavenger Company, telephone conversation, October 5, 1989.

G. GEOTECHNICAL ISSUES

SETTING

Topography

Stadium

The Coliseum Complex is about one-half mile east of San Leandro Bay. The ground surface at the Coliseum is gently sloped and the site is completely developed with the Stadium, Arena, ancillary facilities, and parking lots. Elevations at the Coliseum Complex ranges from five feet above mean sea level (msl) at the outer perimeter of the parking lots to about 11 feet msl adjacent to the Stadium. The elevation of the Stadium playing field, which was excavated during construction, is 22 feet below sea level.

Hall of Fame

The site for the proposed Hall of Fame building is on the north side of the Coliseum Complex, adjacent to or over Damon Slough. The area is relatively flat, with exception of the slough, and elevation is about five feet msl. (See Section E, for a discussion of Damon Slough.)

Office Space

The site for the proposed office space is on the upper plaza between the two sports Arenas. This portion of the plaza is relatively flat with slopes on its north and south sides.

Practice Fields

The practice fields are less than 1,000 feet from San Leandro Bay. Elevation at the practice fields is approximately 12 feet above msl./1/ The ground surface is relatively flat and is developed with two grass practice fields and a fieldhouse. The site is bounded by a tidal marsh (Fan Marsh) across Dolittle Drive, an arm of San Francisco Bay to the north and east, North Field of Metropolitan Oakland International Airport to the south, and Harbor Bay Parkway to the west.

Geology

The Coliseum Complex is near the eastern margin of San Leandro Bay. The site is underlain by deep alluvial sandy silts and clays. Bedrock in the area is known to lie at a depth of a least 500 feet. The thick deposits of alluvial sediments were derived primarily from erosion of bedrock ridges along the west side of the Oakland Hills. They were deposited by shifting stream channels flowing into the subsiding trough to the west. A later rise in the sea level resulted in inundation of the Bay depression and eventually caused the shore line to fluctuate back and forth across the area of the Coliseum leaving a thin veneer of dark grey to black organic silty clays known as Bay Mud./2/ The practice facility is situated within the eastern margin of San Francisco Bay and is also underlain by Bay Mud.

Soils

Stadium

The entire surface of the Coliseum Complex, with exception of the Stadium playing field, is covered by buildings or asphalt or concrete driveway and parking areas. Beneath these is a layer of engineered fill of various thickness range. Underlying the fill is a layer consisting of a stiff black organic silty clay (Bay Mud) which extends to depths of up to 10 feet. The Bay Mud is underlain to depths of 25 or 30 feet principally by medium stiff to stiff silty and sandy clays, sometimes containing fine gravel. Minor layers of clayey sand and gravel are occasionally found between the clays at varying depths. Below depths of 25 to 30 feet the silty and sandy clays become very stiff to

hard and the sand and gravel layers, where encountered, are more pronounced, sometimes being 10 to 15 feet in thickness./3/ Except for the Bay Mud, the natural soils at the site generally have good to very good shear strengths and are moderate to low in compressibility. The Bay Mud has moderately low density and is moderately compressible./3/

Free groundwater was observed in the area prior to construction of the Coliseum Complex, varying between 18 and 37 feet or more below the ground surface. Free groundwater was observed at a depth of 34 feet in what is now the center of the Stadium playing field./3/ It should be noted that since that investigation in the 1960s, the playing field was excavated to a depth of 22 feet below sea level, making the depth to groundwater beneath the completed playing field approximately 12 feet.

Hall of Fame

The site for the proposed Hall of Fame is adjacent to Damon Slough. Prior to the construction of the bridge from 66th Ave. across the slough to the Coliseum parking area, a soils investigation described the soil at this site as having five to seven feet of poorly to moderately compacted fill at the surface. The fill is underlain by five to ten feet of soft, silty clay (Bay Mud). Below the Bay Mud are sands and gravels which are generally medium dense to dense, and stiff to hard silty clays. Free groundwater was encountered at depths of nine to ten feet./4/ This description is similar to those for the soils beneath the Coliseum except that the depth to groundwater is much more shallow. This can be attributed to the test boring's proximity to the slough.

Practice Fields

The practice fields are underlain with artificial fill and Bay Mud. The U.S. Soil Conservation Service classifies the soil on which the practice facility lies as urban land containing mainly heterogeneous fill./5/ The site was once part of a garbage dump operated by the City of Alameda. A portion of the fill was topped off and developed into a practice facility for the Oakland Raiders football team in the late 1960s.

Seismicity

Coliseum Stadium

The San Francisco Bay Region is an area of high seismic activity. Active faults in the area include the San Andreas, 16.2 miles west of the site, the Hayward, 2.4 miles east of the site, and the Calaveras, 12.6 miles east of the site.^{/7/} A major earthquake on any of those faults could produce strong groundshaking at the site. The maximum credible rock acceleration is estimated at greater than 0.5 times the acceleration due to gravity.^{/8/} The presence of deep alluvial deposits beneath the site could amplify bedrock motion. The site is not crossed by any know active or potentially active faults and the likelihood of ground surface rupture due to fault movement is remote. The site is not within an Alquist-Priolo Special Study Zone.

Secondary seismic hazards include liquefaction, settlement, lateral spreading, lurching, seiches, tsunamis and dam failure inundation. Liquefaction affects saturated sands. Because the substrate beneath the Coliseum is composed of sands, it may be prone to liquefaction. Settlement and lateral spreading affect loose soils. The Coliseum is underlain by medium stiff to stiff silty and sandy clays which would not be susceptible to settlement and lateral spreading. Lurching is the horizontal movement of soils embankments, such as creek banks. The site is nearly flat and would not be expected to lurch. The soil embankments along Damon Slough do, however, have the potential for lurching in the event of an earthquake. The Coliseum is approximately one-half mile from San Leandro Bay, a small shallow bay protected from San Francisco Bay by the island of Alameda, and would not be affected by tsumanis or seiches. The site is not within an area subject to dam failure inundation.

Practice Fields

Regional faults in proximity to the practice fields include the San Andreas, 15.3 miles west of the site, the Hayward, 3.6 miles east of the site, and the Calaveras, 13.8 miles south of the site.^{/5/} A major earthquake on any of those faults could produce strong groundshaking at the practice facility. The maximum credible rock acceleration is estimated at greater than 0.5 times the acceleration due to gravity.^{/6/} The presence of artificial fill and Bay Mud beneath the site could amplify bedrock motion. The practice

fields are not crossed by any known active or potentially active faults and the likelihood of ground surface rupture due to fault movement is remote. The site is not within an Alquist-Priolo Special Study Zone. Secondary seismic hazards that are likely to occur at the practice facility include liquefaction of the sandy soils beneath the facility, and possible settlement. The site would not likely be subject to lateral spreading, lurching, tsunamis or seiches.

The October 17, 1989 Loma Prieta earthquake caused no structural damage to any Coliseum facilities.

IMPACTS

Topography, Geology and Soils

Stadium Expansion

The proposed project would require the lowering of the Stadium playing field by approximately six feet to about 28 below mean sea level (msl). To construct a new subsurface drainage system which would satisfactorily lower the groundwater table beneath the Stadium, it would be necessary to over-excavate the playing field by at least an additional six feet. The amount of excavation is estimated at approximately 100,000 cubic yards. The site would remain nearly level after project implementation. Thus, after the excavation and lowering of the playing field, no significant topographic alterations would result.

Hall of Fame

Construction for the proposed Hall of Fame building would require the removal of material for building foundation. However, the exact volume of soil to be removed cannot be determined until a detailed soils investigation and foundation design are completed by a licensed California soils engineer. Excavation for building foundation may expose soils to erosion. Eroded soil could be washed into the adjacent slough and increase sediment load in the slough.

Office Space

Construction of the proposed Exhibit Hall on the upper plaza would not require any substantial topographic alteration of the plaza.

Practice Fields

The area proposed for the artificial turf practice field currently is part of a tidal marsh and elevations range from seven to 12 feet msl. The construction of an additional playing field would require the placement of approximately (awaiting estimates) cubic yards of imported fill. A soils investigation, performed by a licensed California geologist, for the foundation of the new clubhouse would be necessary to determine appropriate building foundation design. Excavation for building foundation and infill for the proposed artificial turf field could expose soils to erosion. Eroded soil could be washed into the adjacent marsh and degrade surface water quality.

Seismicity

Stadium, Hall of Fame, Office Space

The Coliseum area would be subject to strong groundshaking during a major earthquake on the San Andreas, Hayward or Calaveras faults. Soils beneath the Coliseum may be prone to liquefaction which could damage building foundations. As noted above, the Coliseum Complex suffered no structural damage during that earthquake.

The existing Stadium was constructed in accordance with seismic safety standards in effect in the 1960s, and new construction would meet current engineering requirements. The additional seating would increase the maximum number of persons at the Stadium who would be present if an earthquake occurred during at the Stadium. In an earthquake, the presence of large excitable crowds, concentrated in one or two structures, could cause more panic, with resulting pile-ups of people, trampling, etc., than would be expected in conventional buildings. Such panic would be expected if severe structural failure (collapsing building components, falling materials) occurred.

If no visible damage occurred, calm crowd behavior would be likely. This is borne out by the October 17, 1989 Loma Prieta earthquake during the World Series at Candlestick Park in San Francisco, when the patrons were able to leave in an orderly manner after the game was cancelled.

Practice Fields

The practice fields would be subject to strong groundshaking during a major earthquake on the San Andreas, Hayward or Calaveras faults. Soils beneath the facility may be prone to liquefaction which could damage building foundations.

MITIGATION

Identified in this report:

- To evaluate soil conditions and provide input into foundation design, a soils investigation for the proposed Hall of Fame building and for the clubhouse at the practice fields should be prepared by a California-licensed soils engineer.
- To minimize soil erosion, an erosion control plan could be developed by the project civil engineer. In addition, requirements of the City of Oakland grading and erosion control ordinances should be implemented.
- To reduce seismic hazards, design and construct buildings in conformance with the seismic and life safety standards of the Uniform Building Code. Securely fasten shelves, wall hangings and suspended ceilings to the building structure.

NOTES - Geology, Soils and Seismicity

- /1/ Oakland Airport Aerial Photographs. February 1988. Prepared by Seiji & Associates, Inc. for the Port of Oakland. File AA-2744, Sheet No. A-1.
- /2/ Soil Investigation for the Proposed Oakland Coliseum, Oakland California. April 1964. Prepared by Woodward-Clyde-Sherard & Associates, Oakland California.
- /3/ Preliminary Soil Investigation for the Proposed Oakland Coliseum, Oakland California. December 1961. Prepared by Woodward-Clyde-Sherard & Associates, Oakland California.
- /4/ Oakland Coliseum Access Bridges, Soils Investigation. July 1965. Prepared by Woodward-Clyde-Sherard & Associates, Oakland California.
- /5/ U.S. Soil Conservation Service, Soil Survey of Alameda County, California, Western Part, March 1981.

- /6/ Sorensen, P.H. Fill and Development of the Oakland Airport, 1927 to 1989. Prepared for the Port of Oakland.
- /7/ Jennings, C.W. Fault Map of California, California Division of Mines and Geology Data Map, Number 1, 1975.
- /8/ Greensfelder, R.W. Maximum Credible Rock Acceleration from Earthquakes in California, California Division of Mines and Geology Map Sheet 23, 1974.

H. HYDROLOGY

SETTING

Flood Hazard

The Coliseum Complex is located in an area subject to inundation during a 500-year storm event or Zone B as shown on flood maps of the Federal Emergency Management Agency/1/. Flooding in such an event would be expected to occur in this zone as a result of outflow from the sloughs in the vicinity of the Coliseum.

Groundwater

In borings undertaken prior to the construction of the Coliseum Complex in the 1960s, free groundwater was observed to vary between depths of 18 to 37 feet below the surface. The Stadium field was constructed at 22 feet below sea level, below the elevation of what might be considered normal ground water level. A subsurface drainage system was designed as a part of the Stadium to prevent the field from being adversely affected or inundated should the groundwater rise. The subsurface drainage system that is currently in place consists of a perforated pipe placed in an 18-inch thick layer of coarse rock (drain rock). The drain rock is placed between two separate layers of finer graded materials. The bottommost of these filters is laid directly on the silty clay subgrade. The purpose of the filters that underlie the drain rock is to prevent transportation of soil particles into the system if the groundwater were to rise, while the filters that overlie the drain rock are necessary to prevent infiltration from the surface that could transport topsoil downward that could potentially plug the drain rock and pipe. The drain pipe leads to a collector system and a pump station where the water is pumped from the Stadium through the City storm water system and into the slough on

the East side of the Coliseum Complex. The subsurface drainage system was designed to drain only incidental quantities of surface water./1/ Most of the rain water and water used to irrigate the field is removed by surface drainage. The playing field is slightly sloped on both sides of its long axis so that runoff is conveyed to storm drains along the perimeter of the playing field and discharged along with the subsurface drainage.

Impacts

Flood Hazard

The Coliseum Complex is not expected to be inundated in the event of a 500-year storm, although some flooding may occur in the parking lot areas. The Stadium and Arena are elevated above water levels expected during the storm event and contain sufficient drainage facilities such that inundation of these structures is not anticipated. Parts of the Stadium playing field could be flooded until the waters subsided.

Groundwater

The existing subsurface drainage system lies within six feet of the playing surface and would need to be removed. A 1966 investigation into a surface water drainage problem on the playing field found groundwater to exist approximately 5.5 feet below the surface./1/ To construct a new subsurface drainage system which would satisfactorily lower the groundwater table beneath the Stadium, it would be necessary to over-excavate the playing field by at least an additional six feet. Further, the system would be required to be upgraded with a larger capacity pumping system to accomodate any increase in groundwater upwelling caused by an increase in hydrostatic pressure as a result of the removal of the overlying soil.

Mitigation

- Provide subsurface drainage system to maintain groundwater below the new playing field.

NOTES - Hydrology

/1/ FEMA, National Flood Insurance Program, Flood Insurance Rate Map, Pan 0650480025B, Sept. 1982.

/2/ Drainage of Playing Field, Oakland Coliseum. December 1966. Prepared by Woodward-Clyde-Sherard & Associates, Inc. Oakland, California.

I. ENERGY

SETTING

Local Energy Supply and Distribution

The project is within the service area of Pacific Gas and Electric Company (PG&E). PG&E produces electricity from both renewable and non-renewable resources. PG&E also relies on cogeneration geothermal resources, and purchases of surplus hydroelectric power from the Pacific Northwest to provide electricity to its customers. Natural gas is obtained by PG&E from Alberta, Canada, Texas, and California.

PG&E's system-wide electrical capacity is about 24,000 megawatts (MW), consisting of about 42% oil- or gas-fired plants; about nine percent hydro-electric plants; about 13% nuclear plants; about 36% other sources, and purchases from other utilities./1/ By 1996, according to forecasts prepared by the California Energy Commission, PG&E will need an additional 3,200 MW of capacity; load management will become an important consideration in minimizing peak demand for electricity./2/

PG&E purchases, rather than produces, most of its natural gas. Its policy is to purchase first from non-California sources. This policy, which helps preserve California's natural gas in case of shortages, will continue as long as it is economical. PG&E receives about 51% of its natural gas from Canada, about 33% from the southwestern United States, and about 16% from California./1/

Existing Energy Consumption

The Coliseum consumes approximately 8.44 million kilowatt hours (kWh) of electricity annually, with a peak demand of 4,000 kW./3/ Electrical use is divided approximately equally between the Stadium and the Arena. Uses include food preparation, lighting, public address systems, and small wall heaters. Natural gas at the Coliseum is used mostly for space heating in the Arena./4/

In addition to energy consumed on-site, energy is consumed in transportation to and from scheduled events. The average number of cars used in transportation to and from the Coliseum, multiplied by the average number of miles travelled per vehicle and divided by the average number of miles per gallon per vehicle is used to determine the transportation energy expenditure. Use of regularly scheduled BART trains represents an energy cost per year which is unknown. It is known that increased attendance of events at the Coliseum is accompanied by an increase in the percentage of patrons using BART (up to 30% of the gate). This may represent an inverse relationship between attendance and per-person energy expense.

Energy Conservation Policies, Regulations, and Ordinances

Rising energy costs and energy shortages have led to general concern for energy conservation. At the state level, Title 24 of the California Code of Regulations regulates the energy efficiency of buildings and Title 20 regulates the energy efficiency of appliances. New buildings in Oakland must comply with Title 24 through either its prescriptive or its performance standards. Prescriptive standards ensure energy efficiency through required building design features. Performance standards are allowable annual energy budgets which, if met, exempt a building from some prescriptive requirements.

IMPACT

Operation

Detailed information on projected energy consumption of the expanded Stadium and related facilities is not yet available. However, energy consumption can be estimated on the basis of energy consumption factors derived from similar uses.^{/5,6/} (See Table 31.)

The increased seating capacity provided by the project would increase the amount of energy used in food preparation at the Coliseum Complex by about 2.5%, assuming Stadium electrical consumption at one half the total electrical consumption of the Coliseum Complex and using 25% of the electricity in food preparation.^{/4/} Stadium lighting and some space-heating requirements would increase as well. The proportion of this increase is unknown but considered small.^{/4/} An estimate of energy demand

TABLE 31: PROJECT ENERGY CONSUMPTION

PROJECT ENERGY CONSUMPTION (INCREASE OVER EXISTING, IN BILLION BTU)								
	Existing Consumption of Energy	Existing Consumption (in billions of Btu/a,b/	Hall of Fame	Office	Restaurant	Stadium/c/	Total	Total Coliseum Energy Consumption 1995 (billion Btu)
Electricity	8.42 Million kwh /d/	87 /e,f /	1.7	2.3	5.5	2.2	11.7	98.7
Natural Gas	9973 therms	10 /f/	1.5 /g/	.5	2.8		4.8	14.8
Transportation	1.15 million gallons	165 /f/	--	--	--		4.3	169.3
BART	5.49 million kwh /h,i/	56 /f/	--	--	--	13.1	13.1	69.3
TOTAL		318					33.9	352.1

/a/ Units given in billions of Btu unless otherwise stated.

/b/ British thermal units (Btu) are units of heat energy. One Btu is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit at sea level. All forms of energy can be converted to heat energy. Btu values given in this report are "at-source" values, which means that energy used in producing and transporting the various types of energy is included as well as the actual energy content. For example, the at-source energy value of electricity includes losses in energy that occur during the generation and transmission of electricity, and the at-source energy used herein are as follows: electricity, one kWh = 10,239 Btu (California Energy Commission, Building Energy Efficiency Standards, 1987); natural gas, one cubic foot = 1,100 Btu (Interactive Resources, Inc., Energy Conservation: Guidelines for Evaluating New Development in Contra Costa County, California, 1976); gasoline, one gallon = 143,700 Btu (Caltrans, Energy and Transportation Systems, 1983); therm = 100,000 Btu; diesel one gallon = 147,600 Btu (Caltrans, Energy and Transportation Systems, 1983).

/c/ Assumed 2.5% increase in electrical use of Coliseum Complex food preparation (e.g., 50% x total x 25% for food x 20%) for stadium increase.

/d/ One kilowatt-hour (kWh) is the basic unit of electric energy, equal to a demand of one kilowatt of power supplied for one hour.

/e/ It is assumed that 50% of the annual electrical usage at the project site is used by the stadium./4/

/f/ Conversions based on 5.4 kWh/sq. ft. miscellaneous structures, California Energy Commission, August 1985 California Energy Demand 1985-2000. 32.6 kWh per square foot and 13.7 kWh/square foot for restaurant office respectively. 166.7×10^3 Btu/square foot and 29.6×10^3 Btu/square foot for restaurant and offices respectively. Transportation-related energy use for office/restaurant uses would be negligible, in relation to Stadium use.

/g/ Based on 44 cubic feet/sq. ft. California Energy Commission unpublished information.

/h/ Based on a cost of kWh/passenger assuming 20% ridership. Increase to be 30% at capacity football gate.

/i/ John Stamus, Planning and Analysis Division, Bay Area Rapid Transit (BART) personal communication with Bruce Campbell, January 3, 1984.

for the listed improvements is given in Table 31. The total energy budget is expected to increase by about 34 billion Btu. The largest increase is expected in electricity, about 13.1 billion Btu.

Transportation Energy

Annually, approximately 733,500 automobiles travel to and from events at the Oakland Coliseum.^{8/} In 1989, these trips required approximately 1.15 million gallons of gasoline. The fuel requirement would decrease to about 1.04 million gallons with no project, a net 110,000 gallon reduction as a result of increased fuel-efficiency assumed for future vehicles. The project would generate an additional 100,000 annual trips with the addition of a football schedule. The fuel use in this case would rise to 1.18 million gallons, a net 30,000 gallon increase (not including any Hall of Fame attendance).^{9,10/}

Total Operational Energy

Total energy consumption for the project (including operational and transportation energy consumption) would be about 352 billion Btu per year.

MITIGATION

To the extent feasible, seek to exceed the minimum requirements of the State Building Energy Efficiency Standards (Title 24) and use state of the art, energy-conscious design practices that are energy efficient.

- Design structures with large window areas and insulated skylights to allow natural lighting of interior spaces, but provide eaves, overhangs, and vertical partitions, and deciduous trees on the south sides of structures, to avoid excessive solar heating of interior space during the warm season. This measure would reduce electricity demand for lighting and for air conditioning.
- Use light-colored finish materials for roof and exterior walls to reflect heat from the structure, reducing cooling requirements.
- Design structures for passive solar heating by locating most of the glazing area on the southern exposure and locating few or no windows or doors on the northern exposures. Enhance passive solar heating by incorporating thermal mass materials (concrete, brick, plaster) in the interior of structures where this mass can absorb solar heat entering windows on the southern exposures.

- Install sodium-vapor lamps for all street, parking lot, and park lighting. Retain a lighting engineer to design all interior and exterior lighting for maximum efficiency to reduce overall lighting requirements. This measure would reduce the electricity required for project lighting substantially.
- Include a recycling center for aluminum, paper, glass, cardboard, plastics, and other recyclable materials. This measure would substantially reduce the energy lost through disposal of energy-intensive materials, and would also reduce solid waste disposal impacts slightly.
- Consult with and incorporate measures suggested by Pacific Gas and Electric Company regarding feasible energy conservation measures and energy planning.
- Consult PG&E as to the applicability of a Thermal Energy Storage System (TES) for building cooling requirements. Installation of TES would help mitigate increasing peak hour demand on the PG&E system.

NOTES - Energy

- /1/ Pacific Gas and Electric Company, 1988, Annual Report.
- /2/ California Energy Commission, 1985, The 1985 California Electricity Report.
- /3/ Data provided by Mr. Jim Chace, Marketing Representative, PG&E, October 26, 1989.
- /4/ Mr. Saunders, Chief Engineer, Oakland Coliseum, telephone conversation, October 17, 1989.
- /5/ California Energy Commission, August 1985, California Energy Demand: 1985-2005.
- /6/ Unpublished data furnished by California Energy Commission, Mr. Hoang Dan Nguyen.
- /7/ Assume that of the 4,125,736 people that attended Oakland Coliseum in 1988, 20% took BART and that the rest arrived by car, averaging 4.5 people/car. Assume BART patronage at 30% for capacity events.
- /8/ Joanne Martin, Oakland Coliseum, telephone conversation, October 27, 1989.
- /9/ Assume 10 games/year, 64,000 people/game, 70% arrive by automobile at 4.5 people/automobile. Source: BART and Joanne Martin, Oakland Coliseum.
- /10/ California Motor Vehicle Stock, Travel and Fuel Forecast.
- /11/ Mr. Penrose, Marketing Representative for PG&E, telephone conversation, October 26, 1989.
- /12/ Jean Nimura, Analyst, Bay Area Rapid Transit, telephone conversations, October 17 and 26, 1989.

J. AESTHETICS

SETTING

The Coliseum Complex was originally designed by the firm of Skidmore, Owings and Merrill and was completed in 1965. The two major structures, the Stadium and Arena, form an east-west axis at the Coliseum, with large parking areas to the north and south. The Stadium was designed as a generally circular set of grandstands around a playing field. The playing field was developed at about 22 feet below sea level; thus, only the upper part of the Stadium is visible, as an exposed concrete structure, within a landscaped earthen bank, surrounded by lighting standards. Eucalyptus plantings mark the East (bleacher) end of the Stadium. The Arena is also a circular structure rising about 60 feet. A glass facade is recessed behind X-shaped trusses from the base to the roof. In the evening, lighting makes the interior visible from nearby areas. While the Stadium is about twice the diameter of the Arena, the Arena's location near I-880, its height, and its architectural features make it the most prominent visual landmark of the Coliseum Complex.

Short-Range Views

The aerial view seen in Figure 31 illustrates the rectangular site plan. Within the rectangle, the Stadium and Arena appear as circular structures that are connected by the Plaza Level (see Figure 32a). The Stadium, Arena and exhibit hall are surrounded by parking. The ground level view of the complex shows the Stadium and Arena with a similar height of about 60 feet from the parking lot.

Long-Range Views

The Coliseum Complex is a prominent feature in the surrounding landscape. Most uses in the immediate project vicinity are one to two-story commercial structures, while the Coliseum and Arena are equivalent to five stories high. Taller office structures are seen west of I-880.



FIGURE 31
AERIAL VIEW OF OAKLAND - ALAMEDA
COUNTY COLISEUM COMPLEX

Source: Pacific Aerial Surveys
and Environmental Science Associates, Inc



A. The stadium lies east of the arena, and is connected by the Plaza Level. The complex is surrounded by parking.



B. View from the east into the stadium. The view is partially obstructed by trees, scoreboards and advertisement.

FIGURE 32 A & B
VIEWS OF THE PROJECT AREA



C. The external view of stadium shows the opening in the eastern side of the upper decks.



D. View east from upper deck. Existing opening in Second Deck would be completed under the proposed project. Existing field would be lowered 6 feet.

FIGURE 32 C & D
VIEWS OF THE PROJECT AREA



E. Existing Plaza Level, site for the proposed office space.



F. Existing slough and turf farm, south of 66th avenue. Site for proposed Hall of Fame.

FIGURE 32 E & F
VIEWS OF THE PROJECT AREA

The Bay Area Rapid Transit (BART) Coliseum station and overpass connect to the east side of the complex. The area east of the BART elevated structure is characterized by single-family residential units. Areas north and south of the Coliseum Complex are characterized by warehouse and industrial use.

The Stadium structure is circular, and is set on a low grassy hill surrounded by trees. The diameter of the Stadium is smaller at the base than at the top of the structure. The walls of the Stadium, like an amphitheatre, extend upward diagonally to allow maximum seating and viewing of the field below. The first level of Stadium seating (First Deck) extends around the full circumference of the field. The second and third levels of seating (Second Deck and Third Deck), extend around 80% of the Stadium creating a mostly enclosed amphitheatre (See Figure 32b). The second and third level of seating do not have external bracing, which give it the appearance of a shallow cone (See Figure 32). The base of the Stadium, on top of the landscaped hill, serves as a walkway for spectators. The walkway extends the entire circumference of the Stadium, allowing patrons access to seating sections, concessions and lavatory facilities around the Stadium.

The interior focus of the Stadium is on the playing field, which is oriented in an east-west direction in the football and baseball configuration (see Figure 32d). The open portion of the Second and Third Decks is located at the eastern end of the Stadium, allowing spectators a view of the Oakland hills beyond the Stadium. The view is partially obstructed by advertising panels, scoreboards, and trees. The First, Second and Third Decks become progressively steeper as they rise to the top of the Stadium.

Other Uses in the Complex

The Plaza Level, is an elevated structure which bridges the Stadium and Arena. This section houses the exhibit hall and provides underground access from the parking lots to the north to the parking lots to the south (see Figure 32e). The Plaza Level is symmetrical between the Stadium and the Arena. The stairwells, concessions, and open space of the Plaza Level architecturally connect the two structures. Landscaping is extended around the Stadium, the Plaza Level and the Arena. Landscaping includes turf, trees, ivy and bushes.

The trees around the project site are mature eucalyptus, which stand approximately 30 to 40 feet tall and are located along the grassy hill at the base of the Stadium. The parking areas which surround the Stadium and Arena are paved and striped. The absence of landscaping in the parking areas give it a bleak appearance. Damon Slough borders the complex site to the north and east, by a chain-link fence.

Light and Glare

The major source of light emitted from the complex is from the night lighting for night baseball games. The lighting consists of four rectangular fixtures rising from the Stadium. Lighting from the Stadium represents the highest intensity lighting in this section of Oakland. Other sources of light generated on the site are parking lot lights. The parking lot lights are similar to street lighting.

Hall of Fame Site

The proposed site for the Hall of Fame is at the northern portion of the Coliseum Complex, at the intersection of 66th Avenue. The site is currently occupied by the Damon Slough and a turf farm (see Figure 32). Damon Slough separates the turf farm from the Coliseum parking lot. The slough ranges in width from approximately 5 feet to 20 feet, with vegetation along the banks (see Wetlands Section for a description of Damon Slough). The turf farm, located across the slough, is characterized by level topography with dirt ground cover surrounded by a chain link fence. The turf farm and slough are highly visible from 66th Avenue and the I-880 on-ramp. The proposed Hall of Fame site would be adjacent to one of the main entrances to the Coliseum Complex, which is often beset with traffic back-up for vehicles queuing to enter or exit the complex. The Hall of Fame site has a high visual exposure to the surrounding areas.

Practice Fields

The existing football practice fields are located at the corner of Doolittle Drive and the Harbor Bay Parkway. The site is currently occupied by two practice fields, a fieldhouse and parking. The fields are oriented in a northeast to southwest direction. The fields are bordered by trees and bushes, and are not highly visible from roadways. The fields and fieldhouse are surrounded by grassy areas, with variable topography. The fieldhouse is a one-story rectangular building.

IMPACT

Stadium Expansion

The visible portion of expansion of the Stadium would result from extending the entire Second Deck around the east end of the Stadium and partially extending the Third Deck bays. These decks would have similar reinforced concrete construction as the existing station. This would generate a visible impact during construction and after completion of the Second Deck. After the completion of the upper levels, there would be more limited views from the east of the project site into the Stadium. This would not be a significant visual impact, as the view is currently obstructed by advertising panels, scoreboards, and trees.

Light and Glare

The proposed Coliseum expansion would not alter the existing lighting facilities of the Stadium. Additional lighting would be required around the proposed Hall of Fame. The proposed light would be equivalent to street lighting, and would not result in a significant visual impact.

Office Space

The proposed official function rooms space would be constructed between the existing Stadium and Arena on the Plaza Level. The design of the office space is in conceptual stages. However, the plan would include a 16,000 square-foot footprint, with two levels. The construction of the office space would be visible within the Coliseum Complex. The impacts related to construction would likely include heavy equipment. This would be a temporary impact. After the completion of the space, the character of the complex would be altered. The Plaza Level, now a pedestrian connection between the Stadium and the Arena would be replaced by the one-story, upper-level restaurant/function room area. The office space would be below the Plaza Level, now partially occupied by exhibition space.

Hall of Fame

The proposed Hall of Fame would be an 80,000-square-foot, three-level structure. The design for the Hall of Fame is conceptual; it would be located either adjacent to Damon Slough, or on a structure bridging the slough and the turf farm. The Hall of Fame structure would be highly visible from the I-880 freeway on-ramp, 66th Avenue, and the Coliseum Complex to the south. The visible location of this site increases the potential for visual impacts related to the project.

Practice Fields

The development of a third practice field and the reconstruction of the new fieldhouse along Doolittle Drive would require an additional three acres, for a total of 8.2 acres.

The third playing field is proposed to be located adjacent to the existing fields, at an east-west orientation. The fields are not currently visible due to the surrounding vegetation. The new fieldhouse would be larger than the existing fieldhouse, but would be similar in design. The new fieldhouse is not expected to be highly visible to the surrounding area. Visual effects related to the playing fields would result from construction and expansion of the existing use. The construction of the new field house and fields would be a short-term impact. Upon completion of the project, visual impacts of the new facilities would be primarily beneficial.

MITIGATION MEASURES

Identified in this report:

While the Coliseum expansion would not result in significant visual impacts, the following mitigation measures are recommended to improve the overall visual quality of the Coliseum Complex:

- The design of the new office space and the Hall of Fame should be consistent with the design guidelines of the City of Oakland, and with existing architecture of the Stadium and Coliseum. The existing Stadium and Arena rely on use of large structural features (concrete seating; diagonal trusses) as major architectural elements.
- Landscaping should be provided around the Hall of Fame to block the view of it from the 66th Avenue intersection.

- Trees around the Stadium and around the Plaza Level should be retained during construction, to buffer the surrounding views of the project site.
- The design of the Hall of Fame and Office Space should complement the design of the existing facilities, to enhance the entire complex.
- The Hall of Fame should serve as visual entryway into the Coliseum Complex, due to its location.
- The design of the Hall of Fame should reflect its close proximity to the slough, to enhance the wildlife and wetland habitat.
- A landscaping plan should be developed and implemented to enhance the design of the complex, and reduce the visual impact of the large parking lot.
- The design of the facilities should be attractive from the I-880, 66th Avenue and BART.

V. UNAVOIDABLE SIGNIFICANT ADVERSE IMPACTS

The proposed Stadium expansion and related improvements would have potentially significant environmental effects:

TRANSPORTATION

The project would increase event-related vehicle trips and would cumulatively reduce Levels of Service (LOS) at several intersections in the Coliseum vicinity. As discussed in Section IV.B, Transportation, traffic effects of the proposed project would result from increased patronage (from the project) added to existing peak-hour traffic, event traffic based on existing capacity of the Stadium, and cumulative traffic from other development in the Coliseum area. For these circumstances, project traffic by itself would worsen the Levels of Service to unsatisfactory conditions (or more unsatisfactory conditions) for the following event scenarios and the following intersections:

Scenario 1: Football Event - Sunday Noon Period

Hegenberger Road / Coliseum Way: LOS E to LOS F
66th Avenue / Coliseum Way: LOS E to LOS F
66th Avenue / San Leandro: LOS D to LOS E
High / Oakport: LOS D/E to LOS E

Scenario 2: Football Event - Sunday P.M. Period

Hegenberger Road / Baldwin: LOS C to LOS E
Hegenberger Road / E. 14th: LOS C/D to LOS D
73rd Avenue / MacArthur: LOS C to LOS D

Scenario 3: Football Event - Monday P.M. Period

San Leandro / 75th Avenue: LOS C to LOS D
66th Avenue / southbound I-880 ramp: LOS D to LOS D/E
Edes Avenue / northbound I-880 ramp: LOS E to LOS E/F

Scenario 4: Baseball Night Game - Weekday P.M. Period

Hegenberger Road / Coliseum: LOS E to LOS F
66th Avenue / San Leandro: LOS E to LOS F

For other intersections and event scenarios, project traffic would be part of cumulative traffic that could result in poor levels of service (LOS D, E, or F), but those levels are achieved by the future base condition without project traffic. The project by itself would not cause poor LOS, except for the intersections listed above, and would only minimally affect other intersections operating at conditions better than LOS F. Project traffic would add to queue lengths and durations through intersections operating at LOS F in the future base condition.

It should be noted that project effects would be intermittent, compared to typical traffic effects that are analyzed for five-day-a-week, p.m. peak conditions. Football traffic effects would occur up to 11 Sundays a year (eight regular season home games, plus potential playoff games), and up to one Monday night home game a season. Baseball weekday night-game traffic conditions could occur about up to 44 times a season, depending upon scheduling.

The project would add up to 4,200 BART (round-trip) passengers, the equivalent of four 10-car trainloads, before and after a Stadium event. The addition of this number of patrons would lead to substantial crowding on available trains in the Coliseum BART station, or in substantial delays to BART passengers waiting for trains.

Mitigation identified in the EIR could reduce new auto trips generated by Stadium expansion from about 5,400 additional trips (a 20% increase over existing) to about 1,680 additional trips (a 6% increase), principally through a program of expanded express bus ridership, increased BART service frequencies and park/ride lots. Project travel modal splits for the expanded stadium with and without the mitigation program are given in Table 24 on p. 96.

AIR QUALITY

Project traffic would contribute to future exceedances of federal and state carbon monoxide (CO) eight-hour standards at area intersections, under worst-case meteorological conditions: San Leandro Street / 73rd Avenue; San Leandro / 76th; San Leandro / 66th Avenue; and Hegenberger Road / Coliseum Way. In all cases where these exceedances are estimated with the project for peak Monday night football and

weekday baseball traffic conditions, the CO concentration for 1995 conditions would be less than values with existing football or baseball capacity. The improved 1995 conditions reflect reduced future automobile emissions resulting from continuing federal and state programs that would offset the emissions from increased cumulative and project traffic. Project air quality effects would be reduced by transportation mitigation measures to reduce vehicle traffic to Stadium events, as noted above.

Other environmental effects identified in this EIR would not be considered significant, substantial adverse impacts and/or would be mitigated to a level of insignificance (see Table 1).

VI. CUMULATIVE EFFECTS

Development of the project would incrementally increase the amount of building space devoted to professional sports activities. Three development projects have been approved in the study area: a value-oriented retail center, the Hegenberger Retail Shopping Center, and the Cruise America R.V. Retail Center. These nearby projects would not generate substantial traffic or parking demand at the same times and places as the project. (The effects of the proposed new Arena are discussed below.) Vehicle trips generated by project operation would incrementally add to increases in daily and peak-hour trips on local streets and intersections, and would add incrementally to the increases in demand for off-street parking spaces and the anticipated shortfall in off-street parking supply for operation of the Coliseum. Project operation would thereby incrementally add to increased demand for off-street parking spaces.

The major effects of cumulative development on transportation, air quality and noise are evaluated in the respective sections of this EIR. Transportation effects of existing traffic, plus use of existing Stadium capacity, cumulative development in the Coliseum vicinity, and project-related traffic would result in the intersection levels of service described in Section IV.B and would add to cumulative traffic that would result in degraded levels of service. As discussed in the Impacts section, effects of the expanded Stadium would occur up to 70 days per year, depending upon football, baseball and basketball schedules. As discussed in Section V., above, several of the project event scenarios would result in significant effects on intersection operations and BART loading.

The transportation effects of new, larger Arena as a potential cumulative project together with an expanded Stadium are identified in Scenario 6 (see Table 20, p. 88). That scenario assumes a peak event at the existing Arena together with a baseball event, as could occur in the spring, and essentially models the cumulative effects of an enlarged Arena. Because early season baseball games are rarely at capacity, the addition of 5,000 seats with a new Arena, representing a basketball sell-out of 20,000 seats, are modeled by assuming existing Arena capacity with a baseball sell-out. Those traffic effects would not worsen the LOS at the study intersections.

The EIR transportation analysis also reviews cumulative effects of new Arena construction displacing existing Coliseum parking. For Scenario 3, Monday night football, volume/capacity (v/c) ratios would worsen substantially, but LOS would remain at F, as with the non-construction scenarios, at 66th / Coliseum Way; 66th / San Leandro; and High / Oakport. Construction of the new Arena would result in shift of patrons for the south parking lot to areas north and east of the Coliseum. For a construction scenario during concurrent weekday night baseball and basketball events, the LOS would essentially be the same as with the non-construction case. Four intersections would operate at LOS F and one at LOS E; the remainder would operate at LOS C or better.

The project would also contribute to significant cumulative air quality impacts, as discussed in Section VI.B, above. Cumulative noise effects would not be significant.

Project operation would add to cumulative increases in demand for police protection and fire suppression services, water supply, and energy resources, generation of wastewater, and solid waste.

VII. GROWTH INDUCING IMPACTS

Development of the project could have growth-inducing effects by increasing Stadium capacity. On the assumption that the Stadium improvements attract a National Football League franchise to Oakland, and that increased baseball seating capacity resulted in higher ticket sales for the Oakland Athletics, the expanded Stadium would generate additional revenues directly to the Oakland-Alameda County Coliseum Complex, and indirectly to the City of Oakland as a result of additional visitors coming to Oakland to attend Stadium events. The project would result in direct and indirect employment, and would increase the demand for goods and services to serve the increased patronage. It is not expected, however, that the Stadium expansion would result in directly induced new development or physical change. That is, the increased demand for the goods and services would primarily be provided by existing businesses, who may experience higher levels of sales.

VIII. ALTERNATIVES

A. NO-PROJECT

The No-Project Alternative would entail no changes to the project site. Under this alternative, the Oakland Coliseum would not increase the seating capacity to 65,000 seats for football; offices/restaurants would not be constructed on the Plaza Level; the Hall of Fame would not be constructed near 66th Avenue, and the third practice field and new field house would not be added to the Doolittle Drive site. Under the No-Project Alternative, the seating capacity of the Stadium would remain at about 52,000 seats for football.

The No-Project Alternative would not result in impacts associated with expanding the seating capacity of the Oakland Coliseum Complex, particularly traffic and air quality effects associated with increased attendance at Stadium events. This alternative would not result in impacts that may be associated with building the Hall of Fame on or near Damon Slough, nor would this alternative disturb wetlands adjacent to the practice fields along Doolittle Drive. Short-term construction impacts related to expanding Stadium seating capacity and office space would not be experienced under the No-Project Alternative. However, traffic generated by cumulative development in the surrounding area would reduce levels of service at area intersections.

By maintaining the same number of seats, the No-Project Alternative would not allow increased patronage to Stadium events. This alternative would not expand or upgrade administrative offices for the existing tenants of the Coliseum Complex. This alternative was rejected by the project sponsor because it would not attract a National Football League team to the City of Oakland.

B. ALTERNATE SITE

The Alternate Site alternative would relocate the proposed sites for the Hall of Fame and the practice fields at Doolittle Drive to avoid potential project effects on wetlands (Damon Slough near the Coliseum, and the wetland area near the practice fields). This alternative would add 12,000 football seats to the Stadium, and would develop office space at the Plaza Level of the Coliseum, as proposed under the project.

The practice fields are currently located at Doolittle Drive and the Harbor Bay Parkway. With this alternative, the practice fields would be constructed at another site. An alternate site has not yet been identified. The new site would need to be approximately 8.2 acres for three full-size practice fields and a field house.

Under the Alternate Site alternative, the Hall of Fame would be constructed at another location in the City of Oakland. Approximately 80,000 square feet would be needed to house the proposed Hall of Fame. Under this alternative, the potential project effects on wetlands would not occur the permits required for developing on or adjacent to wetlands or the slough would not be required (see Sections on Plans and Policies and Wetlands for permit requirements).

The new site for the practice fields and the Hall of Fame would likely be in the City of Oakland.

This Alternative would expand the Stadium as described for the proposed project; therefore, the effects of this alternative on transportation, air quality, noise, public services, geotechnical issues, hydrology, energy and aesthetics would be as described for the proposed project. Potential significant adverse effects on cumulative transportation and air quality conditions would also be as for the project (see Section V. herein).

This alternative is not attractive to the project sponsor because it would be desirable to have the practice fields and the Hall of Fame in the general area of the Oakland Coliseum.

C. REDUCED MAGNITUDE ALTERNATIVE

The Reduced Magnitude Alternative would expand the Stadium by 6,000 football seats, compared to the proposed 12,000 football seats under the project. The total seating under this proposal would be 58,000 seats. Under this alternative, the Hall of Fame, office space and practice fields would be constructed as proposed under the project. The Reduced Magnitude Alternative would not require the field to be lowered as proposed under the project. The 6,000 additional seating capacity would be achieved by bleacher modifications and by extending the Second Deck and Third Deck bays around the Stadium.

For a Monday night football scenario, when traffic conditions without the project would be most severe, this Alternative would generate about 540 inbound vehicle trip in the 4 p.m. to 5 p.m. peak.

Table 32 compares Levels of Service (LOS) for the Monday night scenario with the project and with the reduced magnitude Alternative. Six of the intersections would remain at service level F under the "reduced seating" alternative, as is also projected under the "full seating" alternative for Monday night football. Three of these intersections would experience substantial decreases (0.05 or more) in volume/capacity ratio; Hegenberger / Coliseum, 66th / Coliseum, and 66th / San Leandro. The intersections of Edes Avenue / NB- I-880 ramp (E/F to E) and 66th Avenue / SB I-880 ramp (D/E to D) would experience moderate improvements in congestion as a result of the "reduced seating" alternative. In addition, the intersection of San Leandro / 75th Street would improve from service level D to C/D. The remaining intersections would operate at service level D or better.

Impacts associated with increasing the seating capacity by 6,000 seats for football would be less than for the project (with 12,000 seats for football). There would be no excavation under this alternative, which would minimize the potential for impacts on hydrology or geology. Impacts related to the construction of the office space, the Hall of Fame, and the additional practice field would be the same as for the project. Under this alternative, the 80,000 square foot Hall of Fame would be constructed on or adjacent to the existing slough, and the practice field would be constructed adjacent to wetlands. Construction would require permits from the agencies with jurisdiction over the flood control channel (See Sections on Plans and Policies and Wetlands for Permit information).

The potential visual effects from constructing the Hall of Fame adjacent to 66th Avenue would be the same as under the project.

Under this alternative the construction impacts from extending the upper decks of the Stadium and constructing the office space on the Plaza Level, would be the same as under the project. Upon completion of the project, the visual character of the Stadium would be altered.

TABLE 32: COMPARISON OF SERVICE LEVELS - REDUCED MAGNITUDE ALTERNATIVE

Football Event - Monday P.M. Period						
<u>Intersection</u>	<u>Existing</u>	<u>Existing & Event</u>	<u>Existing & Cumulative</u>	<u>Future Base /a/</u>	<u>Future & Base /a/ & Project</u>	<u>Future Base & /a/ Alternative</u>
Hegenberger/Edgewater	F (1.07)	F (1.07)	F (1.07)	F (1.07)	F (1.07)	F (1.07)
Hegenberger/Coliseum	B (0.62)	F (1.23)	B/C (0.70)	F (1.35)	F (1.49)	F (1.42)
Hegenberger/Baldwin	A (0.39)	A (0.49)	A (0.58)	B (0.68)	C (0.72)	C (0.71)
Hegenberger/E. 14th	B (0.61)	B (0.68)	B (0.63)	B/C (0.70)	C (0.71)	C (0.71)
San Leandro/75th Avenue	A (0.54)	C (0.75)	A (0.54)	C (0.75)	D (0.85)	C/D (0.80)
San Leandro/73rd Avenue	A (0.36)	A (0.47)	A (0.36)	A (0.47)	A (0.48)	A (0.48)
73rd Avenue/MacArthur	-	-	-	-	-	-
66th Avenue/Coliseum	A (0.42)	F (1.15)	A (0.49)	F (1.30)	F (1.41)	F (1.35)
66th Avenue/San Leandro	C (0.76)	F (1.09)	D (0.82)	F (1.16)	F (1.29)	F (1.22)
66th Avenue/E. 14th	A (0.59)	B (0.65)	B (0.67)	C (0.73)	C (0.74)	C (0.74)
High/Coliseum	F (1.04)	F (1.14)	F (1.04)	F (1.14)	F (1.16)	F (1.15)
High/Oakport	D (0.84)	F (1.25)	D (0.84)	F (1.25)	F (1.33)	F (1.29)
66th Avenue/SB 880 ramp	A (0.32)	A (0.59)	A (0.58)	D (0.85)	D/E (0.90)	D (0.87)
Edes Avenue/NB 880 ramp	A (0.51)	A (0.88)	A (0.57)	E (0.94)	E/F (1.01)	E (0.97)

/a/ Future base is existing event plus cumulative.

SOURCE: Korve Engineering, Inc.

This alternative is not attractive to the project sponsor because it would not result in sufficient seating capacity to attract a National Football League team to the Oakland-Alameda County Coliseum Complex.

D. ALTERNATE CONFIGURATION

The Alternate Configuration would relocate the proposed Hall of Fame, and would reconfigure the practice fields to avoid potential effects on Damon Slough or on wetlands near the practice fields. Under this alternative, the Hall of Fame would remain in the Coliseum Complex site, and the practice fields would remain at the Doolittle Drive site. The expansion of the Stadium seating capacity under this alternative would be the same as with the project. With this alternative, the Hall of Fame and the office space would be combined in a single structure on the Plaza Level, between the Stadium and the Arena.

Under this alternative, the Hall of Fame would be relocated within the Coliseum Complex site to avoid potential adverse affects on wetland habitat in the slough. This alternative would avoid constructing the Hall of Fame on or adjacent to Damon Slough, which would be within Corps of Engineers jurisdiction and the 100-foot shoreline band under BCDC jurisdiction. Under this alternative, there would be a four to five-story structure, which would house both the Hall of Fame and the additional office space for the Coliseum. With the Alternate Configuration alternative, the third practice field would remain adjacent to the two existing practice fields at the Doolittle Drive location, but south of wetlands identified near Doolittle Drive; the proposed project would disturb those wetlands. The area of the practice fields would be 8.2 acres, as with the project.

This alternative would expand the Stadium as described for the proposed project; therefore, the effects of this alternative on transportation, air quality, noise, public services, geotechnical issues, hydrology, energy and aesthetics would be as described for the proposed project. Potential significant adverse effects on cumulative transportation and air quality conditions would also be as for the project (see Section V. herein).

This alternative would not respond to the project's objective of providing a Hall of Fame, operated separately from Coliseum Complex activities, and directly accessible from outside the complex. The Hall of Fame would commemorate Oakland athletes. This structure would not be officially connected to the Coliseum Complex Inc. However, the close proximity to the major sports event location, would complement the Hall of Fame.

The practice fields, with this alternative, would be reconfigured to avoid the existing wetlands at the southeast corner of the site. Reconfiguring the practice fields in this manner could require a north-south orientation for one or more practice fields. The Stadium field is oriented in an east-west direction; one of the goals of the practice fields would be to simulate the playing field environment and orientation of the Stadium field.

**IX. EIR AUTHORS AND CONSULTANTS; PERSONS AND ORGANIZATIONS
CONSULTED**

EIR AUTHORS

City of Oakland, City Planning Department
One City Hall Plaza
Oakland, CA 94612

Assistant Planner: Anu Raud
Environmental Review Coordinator: Charles Bryant

EIR CONSULTANTS

Environmental Science Associates, Inc.
760 Harrison Street
San Francisco, CA 94107

Principal-In-Charge:
Project Manager:
Project Participants:

Marty Abell
Michael Rice
Moana Appleyard
Randall Rasmussen
Marion Womack
John Herndon
Jacqueline Lentz

Korve Engineering, Inc. (Transportation)
180 Grand Avenue
Oakland, CA 94612

Project Manager: Robert Grandy

PROJECT SPONSOR

Oakland-Alameda County Coliseum Complex, Inc.
Oakland, CA 94621

AGENCIES AND PERSONS CONTACTED

Gus Amirzehni, Engineer, Oakland Department of Public Works, Engineering Design.
Michael Blinn, Hellmuth, Obata and Kassabaum, Inc.
Jerry Blueford, Fire Marshal, Oakland Fire Department.
Michael Carlin, Environmental Specialist, San Francisco Bay Regional Water Quality
Control Board.
Bill deCarlo, Assistant General Manager, Oakland Coliseum.
John Chong, Civil Engineering Assistant, East Bay Municipal Utility District.
Captain James Cooper, Oakland Police Department.
Michael Crosetti, Manager, Oakland Scavenger Company.
Thomas H. Doctor, Senior Planner, City of Oakland.
Jane Gomery, Hellmuth, Obata and Kassabaum, Inc.
Frank Grey, Wildlife Biologist, California Department of Fish and Game.
Kelvin Hickenbottom, Civil Engineer, Alameda County Flood Control.
Robert Leidy, Permits Coordinator, Environmental Protection Agency.
I. Jeeva, P.E., Transportation Engineer, City of Oakland.
Mike Kelly, Captain, Oakland Fire Department.

Michael Long, Wildlife Biologist, U.S. Fish and Wildlife Service.
Sergeant Bill Macfarland, Oakland Police Department.
Victor Macias, Supervisor of Maintenance Operations, Oakland Coliseum.
Joanne Martin, Oakland-Alameda County Coliseum
Sharon Moreland, Regulatory Branch, San Francisco District, U.S. Army Corps of Engineers.
Leo O'Brien, Senior Civil Engineer, East Bay Municipal Utility District
Terry Palmisano, Wildlife Biologist, California Department of Fish and Game.
Richard Pasquini, Division Manager, Oakland Scavenger Company.
Diane Pinney, Permit Analyst, San Francisco Bay Conservation and Development Commission.
Robert Quintella, Vice-President, Oakland-Alameda County Coliseum Complex, Inc.
Robert Tasto, Wildlife Biologist, California Department of Fish and Game.
Diane Windham, Wildlife Biologist, National Marine Fisheries Service.
Jay Yang, Kaiser Engineers.

APPENDIX A: NOTICE OF PREPARATION AND RESPONSES

File No. ER 89-41
 Ref. No. _____

City of Oakland
 Oakland, California

INITIAL STUDY
California Environmental Quality Act

- I. **DESCRIPTION OF THE PROJECT:** Expansion of Oakland-Alameda County Coliseum Complex facilities in order to attract an NFL football team. See attachment for further details.
- II. **DESCRIPTION OF THE ENVIRONMENTAL SETTING:** Surrounding area is primarily industrial, with some residential areas about a quarter mile to the north, some commercial along Hegenberger Road to the east, and the Oakland Airport Business Park to the south across the Nimitz Freeway (I-880). The Coliseum BART Station is adjacent to the north. The practice field is adjacent to the Alameda Municipal Golf Course, the North Field of Oakland Airport, and San Leandro Bay.
- III. **ENVIRONMENTAL EFFECTS**
- | | Yes | Maybe | No | Source or Explanation |
|---|-----|-------|----|-----------------------|
| <u>Geophysical.</u> Will the proposal result in: | | | | |
| 1. Unstable earth conditions, including erosion or slides, or changes in geologic substructures either on or off the site? | | X | | See attachment |
| 2. Major changes in topography or ground surface relief features? | X | | | " " |
| 3. Construction on loose fill or other unstable land which might be subject to slides or liquefaction during an earthquake? | | X | | " " |
| 4. Construction within one quarter mile of an earthquake fault? | | | X | |
| 5. Substantial depletion of a nonrenewable natural resource or inhibition of its extraction? | | | X | |
| <u>Air and Water.</u> Will the project result in: | | | | |
| 6. Substantial air emissions, deterioration of ambient air quality or the creation of objectionable odors? | | X | | See attachment |
| 7. Substantial degradation of water quality? | | X | | |
| 8. Changed drainage patterns or increased rates or quantities of surface water runoff? | | | X | |
| 9. Interception of an aquifer by cuts or excavations? | | X | | See attachment |
| <u>Biotic.</u> Will the project: | | | | |
| 10. Reduce the quantity of fish and wildlife in the project vicinity, interfere with migratory or other natural movement patterns, degrade existing habitats or require extensive vegetation removal? | | X | | " " |
| 11. Reduce the numbers of any rare or endangered species of plants or animals? | | X | | " " |
| <u>Land Use and Socio-Economic Factors.</u> Will the project: | | | | |
| 12. Conflict with approved plans for the area or the Oakland Comprehensive Plan? | | | X | |
| 13. Carry the risk of an explosion or the release of hazardous substances, including oil, pesticides, chemicals or radiation? | | X | | See attachment |
| 14. Require relocation of residents and/or businesses? | | | X | |
| 15. Cause a substantial alteration in neighborhood land use, density or character? | | X | | See attachment |
| 16. Generate substantially increased vehicular movement or burden existing streets or parking facilities? | X | | | " " |
| 17. Elicit substantial public controversy or opposition? | | X | | " " |
| 18. Have a substantial impact on existing transportation systems or circulation patterns? | X | | | " " |
| 19. Result in a substantial increase of the ambient noise levels for adjoining areas? | | X | | " " |
| 20. Impose a burden on public services or facilities including fire, solid waste disposal, police, schools or parks? | | X | | " " |
| 21. Impose a burden on existing utilities including electricity, gas, water, and sewers? | | X | | " " |
| 22. Destroy, deface or alter a structure, object, natural feature or site of historic, architectural, archeological or aesthetic significance? | | | X | |
| 23. Involve an increase of 100 or more feet in the height of any structure over any previously existing adjacent structure? | | | X | |

Energy: Will the project:

Yes Maybe No Source or
Explanation

24. Use or encourage use of substantial quantities of fuel or energy?

— X — See attachment

IV. MANDATORY FINDINGS OR SIGNIFICANCE (EIR required if answer to any of the following questions is "yes" or "maybe".)

Yes Maybe No

a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

— X —

b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)

— — X

c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)

— X —

d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

— X —

If any "yes" or "maybe" answers are marked, describe the specific nature of the environmental effects involved and their relationship to the project. (Use an attached sheet if necessary.)

V. DETERMINATION:

On the basis of this initial evaluation:

- ☐ I find the proposed project WILL NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION will be prepared.
- ☒ I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Name Anu Raud

Date August 23, 1989

Title Assistant Planner

ATTACHMENT TO INITIAL STUDY

I. Description of the Project

Expansion of Coliseum facilities in order to attract an NFL football team. This expansion includes the addition of 12,000 new seats for a total seating capacity of approximately 65,000; lowering of playing field by six (6) feet, and lowering access ramp to match field; club lounge area; 63 new luxury boxes; new restroom facilities; new concession stands, renovation of the existing exhibit hall, to be used by concession operator for kitchen and storage use, and a new office/restaurant building between the stadium and arena.

A new Hall of Fame Building of approximately 80,000 square feet will be constructed, probably adjacent to the 66th Avenue entry gate.

Reconstruction and possible expansion of existing practice facility at Doolittle Drive and Harbor Bay Parkway to include replacement of existing building and two practice fields with a new building and three practice fields.

For ease of description, this project has four locations:

A. Coliseum Stadium itself

B. Hall of Fame Building, adjacent to 66th Avenue and Flood Control Channel

C. Area between stadium and arena (location of exhibit hall and new office/restaurant building).

D. Practice Facility at Doolittle Drive and Harbor Bay Parkway.

III. Environmental Effects

1, 2 and 3.

The project involves lowering the playing field an additional six feet (A). The field is already about 22 feet below sea level. In addition, the entire Coliseum facility is in the Flood Plain B Zone. The Hall of Fame building is proposed to be located adjacent to the Flood Channel. It will involve new construction (B).

6. The 12,000 additional seats would cause an increase in trip generation which in turn would have an affect on air quality. The additional concessionaires may have a minimal impact on air quality - odors.

7. and 9.

The area is in the flood plain, is located near various bodies of water and the project itself involves digging an additional six feet below ground (A) and building adjacent to a Flood Channel (B).

10. and 11.

It is unknown if there are any plant or animal species in the project impact area that may be impacted by the proposal. However, there is strong evidence that waterways close to the bay may have species that would need to be considered in such a project.

13. Because of pollution from adjacent industrial uses, there is a risk that the excavation necessary for lowering the playing field could result in the release of hazardous substances.

15. The Hall of Fame building could have an impact on aesthetics.

16. and 18.

The additional 12,000 seats would increase the demand on transportation and parking facilities as would the Hall of Fame attraction. The Hall of Fame attraction would probably have different hours of operation.

17. Staff is not presently aware of any local opposition to the proposed project, but it is possible that opposition may develop.

19. The additional seating capacity may increase the transportation component and increase noise levels. In addition, a new NFL team would increase the hours of operation which would increase the duration of noise.

20. and 21.

The increase in capacity of the stadium and the new Hall of Fame Building may generate increases in City services and other utilities.

24. The increased traffic associated with the project might consume substantial quantities of motor fuel and other energy resources. Increased operation of the Coliseum facilities may also consume substantial quantities of energy (e.g. lighting, public address systems, etc.).

IV. Mandatory Findings of Significance

a. There may be rare or endangered plants or animals in the vicinity of the project which could be reduced in number or restricted in range.

b. The impacts of the individual components of the project may be limited, but cumulatively they could be significant.

d. Potential impacts of the project on geology, topography, air, water, hazardous materials, aesthetics, traffic, parking, noise, public services and utilities, and energy consumption, as identified above, may have direct or indirect substantial adverse effects on human beings.

The EIR must thoroughly discuss these possible adverse effects, mitigation measures which would reduce such effects to a level of insignificance, and alternatives which would avoid or reduce potentially significant adverse impacts. Alternatives discussed in the EIR should include, but not be limited to, the following:

- o No Project.
- o Alternate sites.
- o Project of reduced magnitude.
- o Alternate designs for the proposed development.

Although you, as project sponsor, are responsible for paying the consultant to prepare the EIR, it is legally a City document. Therefore, the work of the consultant is subject to our approval and supervision. The consultant should prepare a written scope of work indicating how each potential impact identified by our Initial Study is proposed to be addressed in the EIR. This scope of work should be forwarded to us as soon as possible for our review and approval.

It must also be understood that the EIR consultant's work is to be supervised by us. There is to be no contact between you and the consultant regarding the preparation or contents of the EIR except as authorized by us. Of course, you will have the opportunity to review and comment on the draft EIR, as will all other interested parties, but you are not to be provided with any preliminary drafts prior to publication of the draft EIR.

The consultant must first prepare an "administrative draft EIR" for our review. After we approve the administrative draft, it becomes a "draft EIR" which we will then circulate to all interested parties for a review and comment period. During the comment period, the City Planning Commission will hold a public hearing on the draft EIR. Following the comment period, a "final EIR" must be prepared which responds to all comments received on the draft.

When the City Planning Commission is satisfied that the EIR adequately addresses all potential impacts of the project, it will certify the document as being complete. Only then can the City act on any approvals required for the project.

Questions may be addressed to Anu Raud, Assistant Planner, or Charles S. Bryant, Environmental Review Coordinator, at 273-3941.

Sincerely,



ALVIN D. JAMES
Director of City Planning

ADJ:CSB:cjr

Enclosure

cc: Ezra Rapport, City Manager's Office
I. Jeeva, Traffic Engineering
Michael Rice, ESA
Robert Grandy, Korve Engineering

ER 89-41

F-204 12ER8941.CSB



RL/9383
Correspondence

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southwest Region, HCB
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404

September 26, 1989

F/SWR13:TDW

City of Oakland
Ms. Anu Raud
Assistant Planner
One City Hall Plaza
Oakland, California 94612

Rec'd 9-29-89

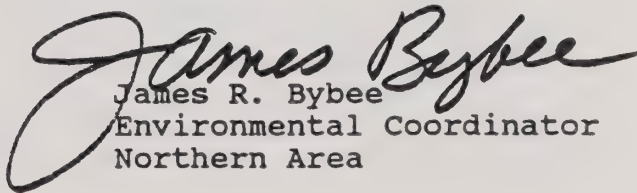
Dear Ms. Raud:

We received the City of Oakland's "Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR)" for the Oakland-Alameda County Coliseum Complex Expansion.

The NOAA Fisheries is responsible for preserving and enhancing marine, estuarine, and anadromous fish resources and the habitats that support these resources. Any activities which may impact these resources of our concern should be thoroughly described in the EIR.

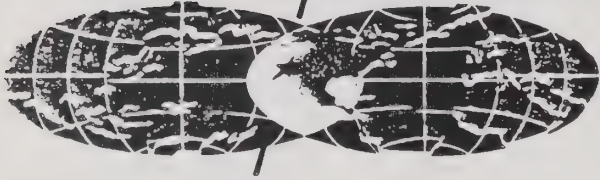
We appreciate the opportunity to comment on the NOP. If you have questions regarding these comments, please contact Diane Windham of my staff at NOAA Fisheries, 777 Sonoma Avenue, Room 325, Santa Rosa, California 95404; telephone (707) 578-7513.

Sincerely,


James R. Bybee
Environmental Coordinator
Northern Area



PORT OF OAKLAND

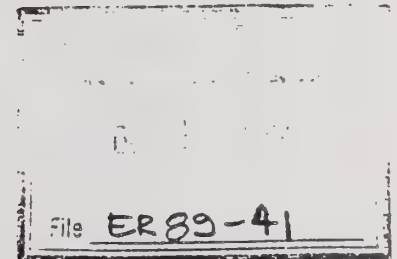


BOARD OF PORT COMMISSIONERS CITY OF OAKLAND

DOUGLAS J. HIGGINS	President
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G. WILLIAM HUNTER	Commissioner
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THOMAS J. SWEENEY	Commissioner

October 11, 1989

Mr. Charles Bryant
Environmental Review Coordinator
City of Oakland
Planning Department
One City Hall Plaza, Room 302
Oakland, CA 94612



Dear Mr. Bryant:

**Subject: ER 89-41: Oakland-Alameda County
Coliseum Complex Expansion**

The Port is in receipt of the City's Notice of Preparation (N.O.P.) for the subject project, and offers the following comments:

- The Port is a Responsible Agency according to the California Environmental Quality Act, due to the fact that the existing practice facility is located on Port property. The Port will therefore be responsible for evaluating and approving the City's Environmental Impact Report (EIR) before granting any approvals (i.e. permit or lease) to users of the facility.
- The practice site is located in the Airport Land Use Commission (ALUC) safety zone (the approach to Runway 15/33). As with existing or past uses in the safety zone, any proposed reconstruction or expansion of the practice facility would be subject to ALUC use restrictions: No more than 25 persons per net acre over an eight hour period, or a maximum of 50 persons per net acre over a two-hour period. Also, any structure to be developed in the safety zone area requires referral to the ALCU.

Mr. Charles Bryant
City of Oakland
Planning Department

- 2 -

October 11, 1989

- . Development at the practice facility would be subject to FAR Part 77 Height Restrictions. Any proposed development exceeding 60 feet at the south end of the practice field or 80 feet at the north end would be considered an obstruction to air navigation.
- . The EIR will address potential traffic and circulation impacts in the project area. Specifically, the level of service should be analyzed for I-880 freeway segments north and south of the 66th Avenue interchange for normal and a.m. and p.m. peak periods. The EIR should address how traffic could affect the ability of existing infrastructure to accommodate forecasted future growth associated with planned Port activities, including projects outlined in the upcoming Airport Master Plan, the Cross-Airport Roadway project and extension of Edgewater Drive.

Please do not hesitate to contact Holly Kaufman at (415) 839-2765 if you have any questions. Thank you for the opportunity to comment on the N.O.P.

Sincerely,

William E. Vandenberg
Manager,
Environmental Department

WEV/HK/vk

cc: J. Glover
C. Foster
T. Lam
B. Szudy
K. Quan
S. Stretchberry
D. Luckhart

pc/hk10099

September 26, 1989

Ms. Anu Raud
Assistant Planner
Oakland City
Planning Department
1 City Hall Plaza
Room 302
Oakland, Ca 94612



Oakland
Chamber of
Commerce

475 14th Street
Oakland, CA 94612-1928
Telephone: 415/874-4800

Subject: Case #ER 89-41, Oakland/Alameda County Coliseum
Complex Expansion

Dear Ms. Raud:

We are in receipt of the notice of preparation of a Draft Environmental Impact Report for the proposed expansion of the Oakland/Alameda County Coliseum Complex to attract an NFL Football Team.

The Oakland Chamber of Commerce is vitally interested in this major development for Oakland. In a preliminary discussion last week at the Coliseum Commerce Center Advisory Committee, and again today with a task force reviewing the proposal for the expansion team, issues dealing with parking, traffic congestion, traffic circulation, and pedestrian circulation were of particular importance. It is noted that under probable environmental effects that these issues will be addressed in the EIR. The business community is particularly concerned with the traffic and related problems dealing with scheduled events in the complex during the business week which in the immediate area oftentimes is an 18-hour day running from approximately 6:00 a.m. - 7:00 a.m. through 11:00 p.m. - 12:00 p.m..

With the success of the present teams, the attendance has greatly accelerated and with the possibility of year-round day and evening events at the Coliseum in the years ahead, it is suggested that particular attention be placed to the impact on the business community. The prospect of a new Hall of Fame building at the Coliseum site offers interesting visitor attraction possibilities and we would suggest that in your study that you evaluate the possibility providing public access to this property on a year-round basis with the normal provisions for visitor accommodations including parking.

MS. ANU RAUD
9/28/89
PAGE -2-

The Chamber of Commerce, in our normal procedure, will be evaluating both the draft and the final EIR's through two Committees: the Planning and Construction Committee and the Coliseum Commerce Center Advisory Committee in this case because it is a project located within the Coliseum Commerce Center. We request that you provide us with two complete copies of the documents and send them to the attention of John K. Christensen, Manager, Economic Development here at the Chamber who will serve as the Coordinator of this project and will be your prime contact.

Sincerely,



Donald I. Barber
President and CEO

DIB/pyw

cc: George S. Winnacker, Chairman of the Board
Michel Laverne, Member, Board of Directors
Robert A. D. Schwartz, Chairman, Coliseum Commerce
Center Advisory Committee
William T. O'Leary, Chairman, Planning and Construction
Committee
John K. Christensen, Manager, Economic Development

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION

THIRTY VAN NESS AVENUE, SUITE 2011

SAN FRANCISCO, CA 94102-6080

PHONE: (415) 557-3686



September 26, 1989

Ms. Anu Raud
Assistant Planner
Oakland City Planning Department
Room 302, City Hall
One City Hall Plaza
Oakland, California 94612

SEP 28 1989

SUBJECT: Oakland - Alameda County Coliseum Complex Expansion
Case Number ER 89-41
BCDC Inquiry File Nos. AL.MC.7517.1 and AL.OA.6924.3
BCDC Airport Planning File

Dear Ms. Raud:

The Commission staff has reviewed the Notice of Preparation of a Draft Environmental Impact Report for the expansion of the Oakland - Alameda County Coliseum Complex Expansion in light of the policies of the San Francisco Bay Plan, McAttee-Petris Act, and the Commission report on diked historic baylands. As a result of this review, we have the following comments.

First, the proposed reconstruction and expansion of the practice field may involve work within the Commission's 100-foot shoreline band jurisdiction. If so, a Commission permit for the work would be required. The Commission will consider whether the proposed project is consistent with the Bay Plan's designation of the site for airport priority uses. The staff does not believe that a professional football team practice field is an airport-related use. However, the Commission may allow interim uses to occur within an airport priority use area if it finds that the uses do not conflict with the present and near-term future aviation needs of the Metropolitan Oakland International Airport. Therefore, the draft EIR should discuss the priority use designation of the site, whether the proposed use could be considered airport-related and, if not, whether the use could be considered interim in nature.

Second, any project proposed within the Commission's shoreline band jurisdiction must provide the maximum feasible public access to the Bay consistent with the project. The draft EIR should address what public access to and along the shoreline exists at and near the project site, whether the proposed project would have any impact on existing public access in the vicinity, and whether shoreline public access improvements could be provided as part of the proposed project either on site, or at a nearby location.

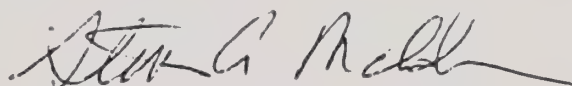
Finally, the site does not appear to be located within a diked historic bayland identified on the Commission's diked historic bayland maps. However, a diked historic bayland exists to the immediate south of the site. The proposed practice field improvements may have an impact on seasonal wetlands and their wildlife resources within this adjacent diked historic bayland.

Ms. Anu Raud
September 26, 1989
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Therefore, the draft EIR should address whether any wetlands exist at the project site, whether the proposed improvements would adversely affect wetland resources at or immediately adjacent to the site and, if so, what measures can be taken to avoid or lessen such impacts.

Thank you very much for the opportunity to comment on the Notice of Preparation. If you have any questions, please contact me at the above telephone number or address.

Very truly yours,



STEVEN A. MCADAM
Assistant Executive Director for
Governmental Affairs

SAM/sm

cc: Dr. Snow, Assistant Secretary of Resources
Mr. James O'Brien, Port of Oakland
Messrs. Chris Brittle and Marc Roddin, MTC



DEPARTMENT OF THE NAVY

NAVAL AIR STATION

ALAMEDA, CALIFORNIA 94501 - 5000

IN REPLY REFER TO

5090

Ser OLE/238

20 September, 1989

Anu Raud
Assistant Planner
City of Oakland Planning Department
City Hall
One City Hall Plaza
Oakland, California 94612

Dear Mr. Raud:

This is in response to your request for comments on the scope and content of an Environmental Impact Report (EIR) for case number ER 89-41 (Oakland - Alameda County Coliseum Complex Expansion). The Naval Air Station (NAS) Alameda has no comments on the scope and content of the EIR for this project.

The NAS Alameda point of contact is R. Cate, Code OLE, at (415) 869-4731.

Sincerely,

A handwritten signature in cursive script, appearing to read "R. B. Steimer", is written above the typed name.

R. B. STEIMER

By direction of the
Commanding Officer



BAY AREA RAPID TRANSIT DISTRICT
800 Madison Street - Lake Merritt Station
P.O. Box 12688
Oakland, CA 94604-2688
Telephone (415) 464-6000

September 21, 1989

ARLO HALE SMITH
PRESIDENT

NELLO BIANCO
VICE-PRESIDENT

FRANK J. WILSON
GENERAL MANAGER

Mr. Anu Raud
Assistant Planner
City of Oakland
One City Hall Plaza
Oakland, CA 94612

Dear Mr. Raud:

DIRECTORS

JOE FITZPATRICK
1ST DISTRICT

NELLO BIANCO
2ND DISTRICT

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3RD DISTRICT

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6TH DISTRICT

WILFRED T. USSERY
7TH DISTRICT

ARLO HALE SMITH
8TH DISTRICT

MICHAEL BERNICK
9TH DISTRICT

I am writing in response to a Notice of Preparation of a Draft Environmental Impact Report for case number ER 89-41.

The Bay Area Rapid Transit District (BART), is interested in reviewing the transportation impacts of the proposed project.

I am requesting that all notices regarding this project and a copy of the DEIR be sent to BART:

Dale A. Fousel
Supervisor, System Access Planning
Bay Area Rapid Transit
Post Office Box 12688
800 Madison Street
Oakland, CA 94604-2688

Please contact me at 464-6148 should you have questions.

Thank you.

A handwritten signature in black ink, reading "Aliza Jaramillo". The signature is fluid and cursive, with a long horizontal line extending from the end of the name.

Aliza Jaramillo
Transportation Planner

cc: Dale Fousel

DEPARTMENT OF TRANSPORTATION

BOX 7310

SAN FRANCISCO, CA 94120

(415) 923-4444



October 13, 1989

ALA-880-PM-26.61

SCH# 89091218

ALA880185 ER 89-41

Anu Raud, Assistant Planner
Oakland City Planning Department, Rm. 302
City Hall, One City Hall Plaza
Oakland, CA 94612

SUBJECT: OAKLAND-ALAMEDA COUNTY COLISEUM COMPLEX
EXPANSION - NOTICE OF PREPARATION

Dear Mr. Raud:

Thank you for including the Department of Transportation in the environmental review process for the above-referenced Notice of Preparation. Information pertaining to traffic impacts on State highway facilities is germane to our agency's statutory responsibilities. The Environmental Impact Report (EIR) should address traffic in terms of the following:

- 1) Trip generation, distribution, and assignment, including the methodologies used to develop those percentages.
- 2) Average Daily Traffic (ADT), AM and PM peak hour trip rates and the Level of Service (LOS) for State Route 880, and for all significantly affected streets, highways, freeway ramps, and controlling intersections for the conditions of "existing", "future no build", "future with project", and "future with project and cumulative projects".

The EIR should fully address the traffic impacts on State facilities and the mitigation measures required to maintain an efficient

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transportation system in the project vicinity. Mitigation discussions should include, but not be limited to, the following areas:

financing,
scheduling,
implementation responsibilities,
monitoring responsibilities.

A project location map showing both the proposed project and cumulative projects which have been approved in the project vicinity should be provided. Projects identified should not be limited to those under the jurisdiction of the lead agency.

Caltrans has a Measure B funded project to modify the Hegenberger Road Interchange. Every effort should be made to coordinate the Coliseum project with the Caltrans project.

We look forward to reviewing the draft E.I.R. when it becomes available. We expect to receive a copy from the State Clearinghouse; however, to expedite the review process, you may send two (2) advance copies to the undersigned contact person for this agency at the following address:

Wade Greene
District CEQA Coordinator
Caltrans District 4
P.O. Box 7310
San Francisco, CA 94120

ALA880185

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Should you have any questions regarding these comments, please contact Alice Jackson of my staff at (415) 557-2483.

Sincerely yours,

BURCH C. BACHTOLD
District Director

by 

WADE GREENE
District CEQA Coordinator

cc: Loreen McMahon, State Clearinghouse
Susan Pultz, MTC
Sally Germain, ABAG

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